

**NSR PERMIT APPLICATION
CALVARY COMPRESOR STATION
LEA COUNTY, NM**

July 2026

Submitted to:
New Mexico Environment Department
Air Quality Bureau, Permits Section
525 Camino de los Marquez, Suite 1
Santa Fe, NM 87505

Prepared for:
Kaiser-Francis Oil Company
PO Box 21468
Tulsa, OK 74121

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Air Permit Application Compliance History Disclosure Form

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

Permittee/Applicant Company Name		Expected Application Submittal Date
Calvary Compressor Station		July 24, 2026
Permittee/Company Contact	Phone	Email
Chris Jones	918-491-4439	chrisjo@kfoc.net
Within the 10 years preceding the expected date of submittal of the application, has the permittee or applicant:		
1	Knowingly misrepresented a material fact in an application for a permit?	☐ Yes ☒ No
2	Refused to disclose information required by the provisions of the New Mexico Air Quality Control Act?	☐ Yes ☒ No
3	Been convicted of a felony related to environmental crime in any court of any state or the United States?	☐ Yes ☒ No
4	Been convicted of a crime defined by state or federal statute as involving or being in restraint of trade, price fixing, bribery, or fraud in any court of any state or the United States?	☐ Yes ☒ No
5a	Constructed or operated any facility for which a permit was sought, including the current facility, without the required air quality permit(s) under 20.2.70 NMAC, 20.2.72 NMAC, 20.2.74 NMAC, 20.2.79 NMAC, or 20.2.84 NMAC?	☒ Yes ☐ No
5b	If "No" to question 5a, go to question 6. If "Yes" to question 5a, state whether each facility that was constructed or operated without the required air quality permit met at least one of the following exceptions: a. The unpermitted facility was discovered after acquisition during a timely environmental audit that was authorized by the Department; or b. The operator of the facility estimated that the facility's emissions would not require an air permit, and the operator applied for an air permit within 30 calendar days of discovering that an air permit was required for the facility.	☐ Yes ☐ No
6	Had any permit revoked or permanently suspended for cause under the environmental laws of any state or the United States?	☐ Yes ☒ No
7	For each "yes" answer, please provide an explanation and documentation. South Bell Lake Pad 5 – Tanks were set on May 6, 2022. A construction permit application was submitted on August 26, 2022. South Bell Lake Pad 7 – Tanks were set on May 13, 2022. A construction permit application was submitted on August 26, 2022	

	South Bell Lake Pad 9 – Tanks were set on May 27, 2022. A construction permit application was submitted on August 26, 2022
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Mail Application To: 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		For Department use only:
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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: ☐ 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.: **96862** 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.2 NMAC**
 (e.g. application for a new minor source would be 20.2.72.200.A NMAC, one example for a Technical Permit Revision is 20.2.72.219.B.1.b NMAC, a Title V acid rain application would be: 20.2.70.200.C NMAC)

Section 1 – Facility Information

Section 1-A: Company Information		AI # 40347	Updating Permit/NOI #: 9530M2
1	Facility Name: Cavalry Compressor Station	Plant primary SIC Code (4 digits): 1311	
		Plant NAIC code (6 digits): 211130	
a	Facility Street Address (If no facility street address, provide directions from a prominent landmark): From Eunice, S on NM-207 for 2.7 mi, R on Delaware Basin Rd for 24.2 mi, R for 0.4 mi, L for 0.75 mi, L for 0.3 mi into facility.		
2	Plant Operator Company Name: Kaiser-Francis Oil Company	Phone/Fax: 918-491-4352	

a	Plant Operator Address: PO Box 21468, Tulsa, OK 74121	
b	Plant Operator's New Mexico Corporate ID or Tax ID:	
3	Plant Owner(s) name(s): Kaiser-Francis Oil Company	Phone/Fax: 918-491-4352
a	Plant Owner(s) Mailing Address(s): PO Box 21468, Tulsa, OK 74121	
4	Bill To (Company): Kaiser-Francis Oil Company	Phone/Fax: 918-491-4352
a	Mailing Address: PO Box 21468, Tulsa, OK 74121	E-mail:
5	☐ Preparer: ☐ Consultant:	Phone/Fax:
a	Mailing Address:	E-mail:
6	Plant Operator Contact: Aaron Daniels	Phone/Fax: 918-491-4352
a	Address: PO Box 21468, Tulsa, OK 74121	E-mail: aarond@kfoc.net
7	Air Permit Contact: Chris Jones	Title: Air Quality Engineer
a	E-mail: chrisjo@kfoc.net	Phone/Fax: 918-491-4439
b	Mailing Address: PO Box 21468, Tulsa, OK 74121	
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: 9530M2
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

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: Oil: 4.58 bbl/h Gas: 2500 Mscf/h Water: 19.58 bbl/h	Daily: Oil: 110 bbl/d Gas: 60 MMscf/d Water: 470 bbl/d	Annually: Oil: 40150 bbl/yr Gas: 21900 MMscf/yr Water: 171550 bbl/yr
b	Proposed	Hourly: Oil: 1.26 bbl/h Gas: 2708 Mscf/h Water: 2.08 bbl/h	Daily: Oil: 30.3 bbl/d Gas: 65 MMscf/d Water: 50 bbl/d	Annually: Oil: 11,053 bbl/yr Gas: 23,725 MMscf/yr Water: 23,725 bbl/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: Oil: 4.58 bbl/h Gas: 2500 Mscf/h Water: 19.58 bbl/h	Daily: Oil: 110 bbl/d Gas: 60 MMscf/d Water: 470 bbl/d	Annually: Oil: 40150 bbl/yr Gas: 21900 MMscf/yr Water: 171550 bbl/yr
b	Proposed	Hourly: Oil: 1.26 bbl/h Gas: 2708 Mscf/h Water: 2.08 bbl/h	Daily: Oil: 30.3 bbl/d Gas: 65 MMscf/d Water: 50 bbl/d	Annually: Oil: 11,053 bbl/yr Gas: 23,725 MMscf/yr Water: 23,725 bbl/yr

Section 1-D: Facility Location Information

1	Latitude (decimal degrees): 32.328221	Longitude (decimal degrees): -103.512877	County: Lea	Elevation (ft): 3500
2	UTM Zone: ☐ 12 or ☒ 13		Datum: ☐ NAD 83 ☒ WGS 84	
a	UTM E (in meters, to nearest 10 meters): 639970		UTM N (in meters, to nearest 10 meters): 3577790	
3	Name and zip code of nearest New Mexico town: Eunice, 88231			
4	Detailed Driving Instructions from nearest NM town (attach a road map if necessary): From Eunice, S on NM-207 for 2.7 mi, R on Delaware Basin Rd for 24.2 mi, R for 0.4 mi, L for 0.75 mi, L for 0.3 mi into facility.			
5	The facility is 20.4 (distance) miles WSW (direction) of Eunice (nearest town).			
6	Land Status of facility (check one): ☐ Private ☐ Indian/Pueblo ☒ Government ☐ BLM ☐ Forest Service ☐ Military			
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: Lea 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: Texas: 36.25 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): 82.3 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: 4,250 m			
12	Method(s) used to delineate the Restricted Area: Barbed wire fence, cattle guard "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:		☐ AM ☐ PM	End: ☒ AM ☒ PM
3	Month and year of anticipated start of construction: 11/2026			
4	Month and year of anticipated construction completion: 11/2026			

5	Month and year of anticipated startup of new or modified facility: 11/2026
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:	NOV Tracking No:	
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:	Date:	Requirement # (or page # and paragraph #):
d	Provide the required text to be inserted in this permit:		
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.)
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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):		Phone:
a	R.O. Title:	R.O. e-mail:	
b	R. O. Address:		
2	Alternate Responsible Official (20.2.70.300.D.2 NMAC):		Phone:
a	A. R.O. Title:	A. R.O. e-mail:	
b	A. R. O. Address:		
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):		
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.):		
a	Address of Parent Company:		
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.):		

6	Telephone numbers & names of the owners' agents and site contacts familiar with plant operations:
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:

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 Chris Jones, Email chrisjo@kfoc.net Phone number 918-491-4439

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.

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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 #	Manufact-urer's Rated Capacity ³ (Specify Units)	Requested Permitted Capacity ³ (Specify Units)	Date of Manufacture ²	Controlled by Unit #	Source Classification Code (SCC)	For Each Piece of Equipment, Check One	RICE Ignition Type (CI, SI, 4SLB, 4SRB, 2SLB) ⁴	Replacing Unit No.	
							Date of Construction/ Reconstruction ²	Emissions vented to Stack #					
ENG1	Natural Gas Compressor Engine	Caterpillar	G3608	XH701678	2500 (Hp)	2500 (Hp)	2/10/2022	CAT1	20200254	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	4SLB	N/A
							7/28/2022	ENG1					
ENG2	Natural Gas Compressor Engine	Caterpillar	G3608	XH701678	2500 (Hp)	2500 (Hp)	2/9/2022	CAT2	20200254	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	4SLB	N/A
							7/28/2022	ENG2					
ENG3	Natural Gas Compressor Engine	Caterpillar	G3608	XH701678	2500 (Hp)	2500 (Hp)	2/16/2022	CAT3	20200254	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	4SLB	N/A
							7/28/2022	ENG3					
ENG4	Natural Gas Compressor Engine	Caterpillar	G3608	TBD	2500 (Hp)	2500 (Hp)	Post-2025	CAT4	20200254	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	4SLB	N/A
							TBD	ENG4					
ENG5	Natural Gas Compressor Engine	Caterpillar	G3608	TBD	2500 (Hp)	2500 (Hp)	Post-2025	CAT5	20200254	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	4SLB	N/A
							TBD	ENG5					
FUG-1	Fugitives	N/A	N/A	N/A	N/A	N/A	N/A	N/A	31088811	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	N/A	N/A
							N/A	N/A					
COMB-1	Enclosed Combustor	Cimarron	AB200	N/A	109 (MMSCF/d)	109 (MMSCF/d)	N/A	N/A	31000205	☐ Existing (unchanged) ☐ New/Additional ☒ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	N/A	N/A
							N/A	COMB-1					
VCU	Vapor Combustion Unit	Zeeco	VCU-8-40-FG	TBD	46 (MMBtu/hr)	46 (MMBtu/hr)	TBD	N/A	31000205	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	N/A	N/A
							TBD	VCU					
RB-GLY	Glycol Reboiler	TBD	TBD	TBD	1.25 (MMBtu/hr)	1.25 (MMBtu/hr)	TBD	N/A	31000228	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	N/A	N/A
							TBD	RB-GLY					
RB-AM1	Amine Reboiler 1	THM	SH03500	TBD	38.9 (MMBtu/hr)	38.9 (MMBtu/hr)	TBD	N/A	31000404	☐ Existing (unchanged) ☒ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	N/A	N/A
							TBD	RB-AM1					
RB-AM2	Amine Reboiler 2	THM	SH03500	TBD	38.9 (MMBtu/hr)	38.9 (MMBtu/hr)	TBD	N/A	31000404	☒ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	N/A	N/A
							TBD	RB-AM1					
HR	Haul Road	N/A	N/A	N/A	N/A	N/A	N/A	N/A	31088811	☐ Existing (unchanged) ☐ New/Additional ☒ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	N/A	N/A
							N/A	N/A					
TL-O	Condensate Truck Loading	N/A	N/A	N/A	46,423 (gal/yr)	46,423 (gal/yr)	N/A	N/A	40400250	☐ Existing (unchanged) ☐ New/Additional ☒ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	N/A	N/A
							N/A	N/A					
TL-W	Produced Water Truck Loading	N/A	N/A	N/A	766,500 (gal/yr)	766,500 (gal/yr)	N/A	N/A	40400250	☐ Existing (unchanged) ☐ New/Additional ☒ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	N/A	N/A
							N/A	N/A					
GB-1	400 bbl Gunbarrel	Long Ind	N/A	5-22-048-005	300 (bbl)	300 (bbl)	4/1/2022	VRU/COMB-1	31000129	☐ Existing (unchanged) ☐ New/Additional ☒ To Be Modified	☐ To be Removed ☐ Replacement Unit ☐ To be Replaced	N/A	N/A
							7/28/2022	COMB-1					

Unit Number ¹	Source Description	Make	Model #	Serial #	Manufact-urer's Rated Capacity ³ (Specify Units)	Requested Permitted Capacity ³ (Specify Units)	Date of Manufacture ²	Controlled by Unit #	Source Classification Code (SCC)	For Each Piece of Equipment, Check One	RICE Ignition Type (CI, SI, 4SLB, 4SRB, 2SLB) ⁴	Replacing Unit No.	
							Date of Construction/ Reconstruction ²	Emissions vented to Stack #					
TK-1	300 bbl Oil Tank	Long Ind	N/A	5-22-048-001	300 (bbl)	300 (bbl)	4/1/2022	VRU/COMB-1	40400311	☐ Existing (unchanged)	☐ To be Removed	N/A	N/A
							7/28/2022	COMB-1		☒ New/Additional To Be Modified	☐ Replacement Unit To be Replaced	N/A	N/A
TK-2	300 bbl Oil Tank	Long Ind	N/A	5-22-048-003	300 (bbl)	300 (bbl)	4/1/2022	VRU/COMB-1	40400311	☐ Existing (unchanged)	☐ To be Removed	N/A	N/A
							7/28/2022	COMB-1		☒ New/Additional To Be Modified	☐ Replacement Unit To be Replaced	N/A	N/A
TK-3	300 bbl Oil Tank	Long Ind	N/A	5-22-048-002	300 (bbl)	300 (bbl)	4/1/2022	VRU/COMB-1	40400311	☐ Existing (unchanged)	☐ To be Removed	N/A	N/A
							7/28/2022	COMB-1		☒ New/Additional To Be Modified	☐ Replacement Unit To be Replaced	N/A	N/A
PWTk-1	300 bbl Water Tank	Long Ind	N/A	5-22-048-004	300 (bbl)	300 (bbl)	4/1/2022	VRU/COMB-1	40400315	☐ Existing (unchanged)	☐ To be Removed	N/A	N/A
							7/28/2022	COMB-1		☒ New/Additional To Be Modified	☐ Replacement Unit To be Replaced	N/A	N/A
AMINE	Amine Unit	Reset Energy	N/A	TBD	950 (gpm)	950 (gpm)	TBD	COND-A/VCU	31000201	☐ Existing (unchanged)	☐ To be Removed	N/A	N/A
							TBD	VCU		☒ New/Additional To Be Modified	☐ Replacement Unit To be Replaced	N/A	N/A
DEHY	Glycol Dehydrator	Reset Energy	N/A	TBD	20 (gpm)	20 (gpm)	TBD	COND-G/VCU	31000227	☐ Existing (unchanged)	☐ To be Removed	N/A	N/A
							TBD	VCU		☒ New/Additional To Be Modified	☐ Replacement Unit To be Replaced	N/A	N/A
MSS	Startup Shutdown Maintenance	N/A	N/A	N/A	N/A	N/A	N/A	N/A	31088811	☐ Existing (unchanged)	☐ To be Removed	N/A	N/A
							N/A	N/A		☒ New/Additional To Be Modified	☐ Replacement Unit To be Replaced	N/A	N/A
RB-1	Glycol Reboiler	N/A	N/A	N/A	N/A	N/A	N/A	N/A	31000228	☐ Existing (unchanged)	☒ To be Removed	N/A	N/A
							N/A	N/A		☒ New/Additional To Be Modified	☐ Replacement Unit To be Replaced	N/A	N/A
COMB-2	Combustor	N/A	N/A	N/A	N/A	N/A	N/A	N/A	31000205	☐ Existing (unchanged)	☒ To be Removed	N/A	N/A
							N/A	N/A		☒ New/Additional To Be Modified	☐ Replacement Unit To be Replaced	N/A	N/A
COMB-3	Combustor	N/A	N/A	N/A	N/A	N/A	N/A	N/A	31000205	☐ Existing (unchanged)	☒ To be Removed	N/A	N/A
							N/A	N/A		☒ New/Additional To Be Modified	☐ Replacement Unit To be Replaced	N/A	N/A
DEHY-1	Glycol Dehydrator	N/A	N/A	N/A	N/A	N/A	N/A	N/A	31000227	☐ Existing (unchanged)	☒ To be Removed	N/A	N/A
							N/A	N/A		☒ New/Additional To Be Modified	☐ Replacement Unit 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 Activities¹ (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 20.2.B.5 "similar functions" units, operations, and activities in Section 6, Calculations. Equipment and activities exempted under 20.2.72.202 NMAC may not necessarily be Insignificant under 20.2.70 NMAC (and vice versa). Unit & stack numbering must be consistent throughout the application package. Per Exemptions Policy 02-012.00 (see http://www.env.nm.gov/aqb/permit/aqb_pol.html), 20.2.72.202.B NMAC Exemptions do not apply, but 20.2.72.202.A NMAC exemptions do apply to NOI facilities under 20.2.73 NMAC. List 20.2.72.301.D.4 NMAC Auxiliary Equipment for Streamline applications in Table 2-A. The List of Insignificant Activities (for TV) can be found online at <https://www.env.nm.gov/wp-content/uploads/sites/2/2017/10/InsignificantListTitleV.pdf>. TV sources may elect to enter both TV Insignificant Activities and Part 72 Exemptions on this form.

Unit Number	Source Description	Manufacturer	Model No.	Max Capacity	List Specific 20.2.72.202 NMAC Exemption (e.g. 20.2.72.202.B.5)	Date of Manufacture /Reconstruction ²	For Each Piece of Equipment, Check One	
			Serial No.	Capacity Units	Insignificant Activity citation (e.g. IA List Item #1.a)	Date of Installation /Construction ²		
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
							☐ Existing (unchanged)	☐ To be Removed
							☐ New/Additional	☐ Replacement Unit
							☐ To Be Modified	☐ To be Replaced
							☐ Existing (unchanged)	☐ To be Removed
							☐ New/Additional	☐ Replacement Unit
							☐ To Be Modified	☐ To be Replaced
							☐ Existing (unchanged)	☐ To be Removed
							☐ New/Additional	☐ Replacement Unit
							☐ To Be Modified	☐ To be Replaced
							☐ Existing (unchanged)	☐ To be Removed
							☐ New/Additional	☐ Replacement Unit
							☐ To Be Modified	☐ To be Replaced
							☐ Existing (unchanged)	☐ To be Removed
							☐ New/Additional	☐ Replacement Unit
							☐ To Be Modified	☐ To be Replaced
							☐ Existing (unchanged)	☐ To be Removed
							☐ New/Additional	☐ Replacement Unit
							☐ To Be Modified	☐ To be Replaced
							☐ Existing (unchanged)	☐ To be Removed
							☐ New/Additional	☐ Replacement Unit
							☐ To Be Modified	☐ To be Replaced
							☐ Existing (unchanged)	☐ To be Removed
							☐ New/Additional	☐ Replacement Unit
							☐ To Be Modified	☐ To be Replaced
							☐ Existing (unchanged)	☐ To be Removed
							☐ New/Additional	☐ Replacement Unit
							☐ To Be Modified	☐ To be Replaced

Unit Number	Source Description	Manufacturer	Model No.	Max Capacity	List Specific 20.2.72.202 NMAC Exemption (e.g. 20.2.72.202.B.5)	Date of Manufacture /Reconstruction ²	For Each Piece of Equipment, Check One		
			Serial No.	Capacity Units	Insignificant Activity citation (e.g. IA List Item #1.a)	Date of Installation /Construction ²			
							☐ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To Be Removed ☐ Replacement Unit ☐ To Be Replaced	
							☐ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To Be Removed ☐ Replacement Unit ☐ To Be Replaced	
							☐ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To Be Removed ☐ Replacement Unit ☐ To Be Replaced	
							☐ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To Be Removed ☐ Replacement Unit ☐ To Be Replaced	
							☐ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To Be Removed ☐ Replacement Unit ☐ To Be Replaced	
							☐ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To Be Removed ☐ Replacement Unit ☐ To Be Replaced	
							☐ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To Be Removed ☐ Replacement Unit ☐ To Be Replaced	
							☐ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To Be Removed ☐ Replacement Unit ☐ To Be Replaced	
							☐ Existing (unchanged) ☐ New/Additional ☐ To Be Modified	☐ To Be Removed ☐ Replacement Unit ☐ 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.

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 20.2.7. 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.

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 (Consider federally enforceable controls 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 ₂ S		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
ENG1	2.76	12.07	21.33	93.42	7.75	33.94	0.01	0.04	0.17	0.75	0.17	0.75	0.17	0.75	--	--	--	--
ENG2	2.76	12.07	21.33	93.42	7.75	33.94	0.01	0.04	0.17	0.75	0.17	0.75	0.17	0.75	--	--	--	--
ENG3	2.76	12.07	21.33	93.42	7.75	33.94	0.01	0.04	0.17	0.75	0.17	0.75	0.17	0.75	--	--	--	--
ENG4	1.65	7.24	21.33	93.42	7.75	33.94	0.01	0.04	0.17	0.75	0.17	0.75	0.17	0.75	--	--	--	--
ENG5	1.65	7.24	21.33	93.42	7.75	33.94	0.01	0.04	0.17	0.75	0.17	0.75	0.17	0.75	--	--	--	--
COMB-1	0.01	0.06	0.03	0.12	0.91	4.01	0.0004	0.0018	0.00	0.00	0.001	0.00	0.001	0.00	0.000	0.001	--	--
VCU	0.04	0.16	0.04	0.16	0.03	0.12	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.01	0.000	0.000	--	--
AMINE	--	--	--	--	128.14	561.25	--	--	--	--	--	--	--	--	0.001	0.006	--	--
DEHY	--	--	--	--	197.76	866.20	--	--	--	--	--	--	--	--	--	--	--	--
TK-1 - TK-3	--	--	--	--	1.47	6.42	--	--	--	--	--	--	--	--	0.000	0.000	--	--
PWTK-1	--	--	--	--	0.04	0.18	--	--	--	--	--	--	--	--	0.000	0.002	--	--
GB-1	--	--	--	--	11.54	50.55	--	--	--	--	--	--	--	--	0.000	0.001	--	--
RB-GLY	0.12	0.54	0.10	0.45	0.01	0.03	0.004	0.02	0.01	0.04	0.01	0.04	0.01	0.04	0.000	0.000	--	--
RB-AM1	1.56	6.82	1.59	6.99	0.74	3.24	0.14	0.61	0.29	1.27	0.29	1.27	0.29	1.27	--	--	--	--
RB-AM2	1.56	6.82	1.59	6.99	0.74	3.24	0.14	0.61	0.29	1.27	0.29	1.27	0.29	1.27	--	--	--	--
TL-O	--	--	--	--	55.06	0.15	--	--	--	--	--	--	--	--	0.004	0.000	--	--
TL-W	--	--	--	--	1.62	0.07	--	--	--	--	--	--	--	--	0.004	0.000	--	--
FUG	--	--	--	--	1.59	6.96	--	--	--	--	--	--	--	--	0.000	0.001	--	--
HR	--	--	--	--	--	--	--	--	0.15	0.01	0.15	0.01	0.15	0.01	--	--	--	--
SSM					*												--	--
Totals	14.86	65.09	110.01	481.82	438.39	1672.12	0.33	1.46	1.60	6.35	1.60	6.35	1.60	6.35	0.01	0.01	--	--

" * " indicates lb/hr emission rates are not appropriate for this unit.

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 1.41E⁴).

Unit No.	NOx		CO		VOC		SOx		PM ¹		PM10 ¹		PM2.5 ¹		H ₂ S		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
ENG1	2.76	12.07	2.37	10.38	2.68	11.73	0.01	0.04	0.17	0.75	0.17	0.75	0.17	0.75	--	--	--	--
ENG2	2.76	12.07	2.37	10.38	2.68	11.73	0.01	0.04	0.17	0.75	0.17	0.75	0.17	0.75	--	--	--	--
ENG3	2.76	12.07	2.37	10.38	2.68	11.73	0.01	0.04	0.17	0.75	0.17	0.75	0.17	0.75	--	--	--	--
ENG4	1.65	7.24	2.37	10.38	2.68	11.73	0.01	0.04	0.17	0.75	0.17	0.75	0.17	0.75	--	--	--	--
ENG5	1.65	7.24	2.37	10.38	2.68	11.73	0.01	0.04	0.17	0.75	0.17	0.75	0.17	0.75	--	--	--	--
COMB-1	0.07	0.29	0.13	0.58	0.02	0.08	0.00	0.02	0.00	0.01	0.00	0.01	0.002	0.010	0.00	0.00	--	--
VCU	6.99	30.62	6.99	30.62	6.09	26.77	11.10	48.63	0.43	1.90	0.43	1.90	0.43	1.90	0.06	0.26	--	--
AMINE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DEHY	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TK-1 - TK-3	--	--	--	--	0.03	0.13	--	--	--	--	--	--	--	--	--	--	--	--
PWTK-1	--	--	--	--	0.00	0.00	--	--	--	--	--	--	--	--	--	--	--	--
GB-1	--	--	--	--	0.23	1.01	--	--	--	--	--	--	--	--	--	--	--	--
RB-GLY	0.12	0.54	0.10	0.45	0.01	0.03	0.004	0.020	0.01	0.04	0.01	0.04	0.01	0.04	0.00	0.00	--	--
RB-AM1	1.56	6.82	1.59	6.99	0.74	3.24	0.140	0.611	0.29	1.27	0.29	1.27	0.29	1.27	--	--	--	--
RB-AM2	1.56	6.82	1.59	6.99	0.74	3.24	0.140	0.611	0.29	1.27	0.29	1.27	0.29	1.27	--	--	--	--
TL-O	--	--	--	--	55.06	0.15	--	--	--	--	--	--	--	--	0.00	0.00	--	--
TL-W	--	--	--	--	1.62	0.07	--	--	--	--	--	--	--	--	0.00	0.00	--	--
FUG	--	--	--	--	1.59	6.96	--	--	--	--	--	--	--	--	0.00	0.00	--	--
HR	--	--	--	--	--	--	--	--	0.15	0.01	0.15	0.01	0.15	0.01	--	--	--	--
SSM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Totals	21.87	95.78	22.27	97.53	79.51	100.33	11.44	50.10	2.04	8.25	2.04	8.25	2.04	8.25	0.07	0.26	--	--

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: Startup Shutdown and Routine Maintenance Emissions

This table is intentionally left blank since all emissions at this facility due to routine or predictable startup, shutdown, or scheduled 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 or 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 ₂ S		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
ENG1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ENG2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ENG3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ENG4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ENG5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
COMB-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
VCU	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
AMINE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DEHY	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TK-1 - TK-3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PWTK-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GB-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
RB-GLY	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TL-O	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TL-W	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FUG	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HR	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MSS	--	--	--	--	135.69	6.04	--	--	--	--	--	--	--	--	--	--	--	--
Totals	0.00	0.00	0.00	0.00	135.69	6.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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

☒ 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.

[illegible]

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.

Stack Type (Engine, Turbine, Flare, ECD, or Thermal Oxidizer Etc.)	Serving Unit Number(s) from Table 2-A	Orientation (H=Horizontal V=Vertical)	Height Above	Temp.	Flow Rate	Velocity	Inside Diameter (ft)
			Ground (ft)	(F)	(acfs)	(ft/sec)	
ENG1	ENG1	V	23	785	270.28	152.95	1.50
ENG2	ENG2	V	23	785	270.28	152.95	1.50
ENG3	ENG3	V	23	785	270.28	152.95	1.50
ENG4	ENG4	V	23	785	270.28	152.95	1.50
ENG5	ENG5	V	23	785	270.28	152.95	1.50
RB-GLY	RB-GLY	V	20	500	8.41	42.82	0.50
RB-AM1	RB-AM1	V	27	517	150.00	47.77	2.00
RB-AM2	RB-AM2	V	27	517	150.00	47.77	2.00
VCU	VCU	V	40	1500	--	65.17	5.14
COMB-1	COMB-1	V	25	1400	--	65.62	0.42

Table 2-I: Emission Rates for HAPs

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.(s)	Unit No.(s)	Total HAPs		Benzene		Toluene		Ethylbenzene		Xylene		n-Hexane		Formaldehyde		Acrolein		Acetaldehyde	
		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
ENG1	ENG1	0.5818	2.5483	0.0075	0.0331	0.0070	0.0306	-	-	0.0032	0.0138	0.0019	0.0083	0.3307	1.4484	0.0882	0.3861	0.1434	0.6280
ENG2	ENG2	0.5818	2.5483	0.0075	0.0331	0.0070	0.0306	-	-	0.0032	0.0138	0.0019	0.0083	0.3307	1.4484	0.0882	0.3861	0.1434	0.6280
ENG3	ENG3	0.5818	2.5483	0.0075	0.0331	0.0070	0.0306	-	-	0.0032	0.0138	0.0019	0.0083	0.3307	1.4484	0.0882	0.3861	0.1434	0.6280
ENG4	ENG4	0.5818	2.5483	0.0075	0.0331	0.0070	0.0306	-	-	0.0032	0.0138	0.0019	0.0083	0.3307	1.4484	0.0882	0.3861	0.1434	0.6280
ENG5	ENG5	0.5818	2.5483	0.0075	0.0331	0.0070	0.0306	-	-	0.0032	0.0138	0.0019	0.0083	0.3307	1.4484	0.0882	0.3861	0.1434	0.6280
COMB-1	COMB-1	0.0007	0.0029	0.0001	0.0004	0.0001	0.0003	0.0001	0.0005	0.0000	0.0002	0.0003	0.0013	0.0000	0.0002	-	-	-	-
VCU	VCU	0.7362	3.2884	0.2818	1.2345	0.1677	0.7346	0.1796	0.7866	0.0682	0.3658	0.0346	0.1482	0.0043	0.0188	-	-	-	-
AMINE	AMINE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DEHY	DEHY	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TK-1 - TK-3	TK-1 - TK-3	0.0015	0.0064	0.0002	0.0011	0.0002	0.0007	0.0003	0.0011	0.0001	0.0003	0.0007	0.0031	-	-	-	-	-	-
PWTK-1	PWTK-1	0.0005	0.0021	0.0002	0.0007	0.0001	0.0005	0.0002	0.0007	0.0000	0.0002	0.0000	0.0000	-	-	-	-	-	-
GB-1	GB-1	0.0113	0.0496	0.0019	0.0085	0.0013	0.0058	0.0020	0.0086	0.0006	0.0026	0.0055	0.0242	-	-	-	-	-	-
RB-GLY	RB-GLY	0.0023	0.0101	0.0000	0.0000	0.0000	0.0000	--	--	--	--	0.0022	0.0097	0.0001	0.0004	--	--	--	--
RB-AM1	RB-AM1	0.0718	0.3143	0.0001	0.0004	0.0001	0.0006	--	--	--	--	0.0686	0.3007	0.0029	0.0125	--	--	--	--
RB-AM2	RB-AM2	0.0718	0.3143	0.0001	0.0004	0.0001	0.0006	--	--	--	--	0.0686	0.3007	0.0029	0.0125	--	--	--	--
TL-O	TL-O	3.0305	0.0081	0.4924	0.0013	0.0620	0.0002	0.0845	0.0002	0.1465	0.0004	0.1183	0.0003	---	---	---	---	---	---
TL-W	TL-W	1.6197	0.0716	0.6162	0.0272	0.3616	0.0160	0.5003	0.0221	0.1416	0.0063	0.0000	0.0000	---	---	--	--	--	--
FUG	FUG	0.2400	1.0510	0.0128	0.0559	0.0246	0.1075	0.1184	0.5186	0.0414	0.1815	0.0347	0.1519	---	---	--	--	--	--
HR	HR	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SSM	SSM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Totals:		8.70	17.86	1.44	1.50	0.65	1.02	0.89	1.34	0.41	0.63	0.34	0.98	1.66	7.29	0.44	1.93	0.72	3.14

Table 2-J: Allowable Fuels and Fuel Sulfur for Combustion Emission Units:

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

Unit No.	Fuel Type (Natural Gas, Field Gas, Propane, Diesel, ...)	Fuel Source (purchased commercial, pipeline quality natural gas, residue gas, raw/field natural gas, process gas, or other			
			Diesel Fuel Only: ppm of Sulfur	Lower Heating Value (BTU/SCF)	Annual Fuel Usage (MMSCF/y)
ENG1	Natural Gas	Pipeline Quality Natural Gas, Field Natural Gas	N/A	1158.79	129.65
ENG2	Natural Gas	Pipeline Quality Natural Gas, Field Natural Gas	N/A	1158.79	129.65
ENG3	Natural Gas	Pipeline Quality Natural Gas, Field Natural Gas	N/A	1158.79	129.65
ENG4	Natural Gas	Pipeline Quality Natural Gas, Field Natural Gas	N/A	1158.79	129.65
ENG5	Natural Gas	Pipeline Quality Natural Gas, Field Natural Gas	N/A	1158.79	129.65
RB-GLY	Natural Gas	Pipeline Quality Natural Gas, Field Natural Gas	N/A	1159	9.45
RB-AM1	Natural Gas	Pipeline Quality Natural Gas, Field Natural Gas	N/A	1159	294.07
RB-AM2	Natural Gas	Pipeline Quality Natural Gas, Field Natural Gas	N/A	1159	294.07
COMB-1	Natural Gas	Pipeline Quality Natural Gas, Field Natural Gas	N/A	1016	0.88
VCU	Natural Gas	Pipeline Quality Natural Gas, Field Natural Gas	N/A	1159	2.37

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.

[illegible]

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

[illegible]

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	
Note: 1.00 bbl = 0.159 M ³ = 42.0 gal					MG: Medium Gray	
					BL: Black	
					OT: Other (specify)	

Note: 1.00 bbl = 0.159 M³ = 42.0 gal

[illegible]

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.

[illegible]

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

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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 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 ₂ O ton/yr	CH ₄ ton/yr	SF ₆ ton/yr	PFC/HFC ton/yr ²									Total GHG Mass Basis ton/yr ⁴	Total CO ₂ e ton/yr ⁵
Unit No.	GWPs ¹	1	298	25	22,800	footnote 3										
ENG1	mass GHG	10573.41	0.02	86.26											10659.6936	
	CO ₂ e	10573.41	4.92	2156.61												12734.9464
ENG2	mass GHG	10573.41	0.02	86.26											10659.6936	
	CO ₂ e	10573.41	4.92	2156.61												12734.9464
ENG3	mass GHG	10573.41	0.02	86.26											10659.6936	
	CO ₂ e	10573.41	4.92	2156.61												12734.9464
ENG4	mass GHG	10500.99	0.02	86.26											10587.273	
	CO ₂ e	10500.99	4.92	2156.61												12662.5258
ENG5	mass GHG	10500.99	0.02	86.26											10587.273	
	CO ₂ e	10500.99	4.92	2156.61												12662.5258
COMB-1	mass GHG	295.20	0.00	0.25											295.44701	
	CO ₂ e	295.20	0.14	6.26												301.59
VCU	mass GHG	201539.60	0.06	55.73											201595.39	
	CO ₂ e	201539.60	16.73	1393.22												202949.55
AMINE	mass GHG	--	--	12.98											12.98	
	CO ₂ e	--	--	324.52												324.52
DEHY	mass GHG	--	--	1.50											1.50	
	CO ₂ e	--	--	37.47												37.47
TK-1 - TK-3	mass GHG	--	--	0.00											0.00	
	CO ₂ e	--	--	0.10												0.10
PWTK-1	mass GHG	--	--	0.00											0.00	
	CO ₂ e	--	--	0.01												0.01
GB-1	mass GHG	--	--	0.17											0.17	
	CO ₂ e	--	--	4.26												4.26
RB-GLY	mass GHG	639.11	0.01	0.00											639.12095	
	CO ₂ e	639.11	0.30	0.36												639.77
RB-AM1	mass GHG	19889.03	0.37	0.04											19889.44	
	CO ₂ e	19889.03	9.37	11.17												19909.57
RB-AM2	mass GHG	19889.03	0.37	0.04											19889.44	
	CO ₂ e	19889.03	9.37	11.17												19909.57
TL-O	mass GHG	0.00	--	0.00											0.00	
	CO ₂ e	0.00	--	0.00												0.00
TL-W	mass GHG	0.00	--	0.00											0.00	
	CO ₂ e	0.00	--	0.00												0.00
FUG	mass GHG	4.30	--	8.50											12.80	
	CO ₂ e	4.30	--	212.52												216.82
HR	mass GHG	--	--	--											0.00	
	CO ₂ e	--	--	--												0.00
MSS	mass GHG	9.52	--	18.83											28.35	
	CO ₂ e	9.52	--	470.79												480.31
	mass GHG	294988.01	0.90	529.36											295518.27	
	CO ₂ e	294988.01	60.54	13254.90												308303.44

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 CO₂e 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.

Application Summary

Kaiser-Francis Oil Company (KFOC) owns and operates the Cavalry Compressor Station (Facility) which is located 20.4 miles west southwest of Eunice in Lea County, New Mexico. The following equipment is authorized under GCP-O&G Permit #9530M2:

- Three (3) 300-bbl Oil Tanks (TANK-1-3)
- One (1) 300-bbl Produced Water Tanks (PWTK-1)
- One (1) 400-bbl Gunbarrel Separator (GB-1)
- One (1) 60 MMscfd glycol dehydration unit (DEHY-1)
- Three (3) enclosed combustors (COMB-1-3)
- One (1) 2.0 MMBtu/hr glycol reboiler (RB-1)
- One (1) electric vapor recovery unit (VRU-1)
- Oil Truck Loading (LOAD-1)
- Water Truck Loading (LOAD-2)
- Unpaved Haul Road (HR-1)
- Five (5) natural gas-fired compressor engines (ENG-1-5)
- Fugitive emissions (FUG-1)
- Malfunction emissions (MALF)
- SSM emissions (SSM)

KFOC is proposing the following changes:

- Removing two (2) enclosed combustors (COMB-2-3)
- Removing one (1) 60 MMscfd glycol dehydration unit (DEHY-1)
- Removing one (1) 2.0 MMBtu/hr glycol reboiler (RB-1)
- Adding one (1) 65 MMscfd/20 gpm glycol dehydration unit (DEHY)
- Adding one (1) 1.25 MMBtu/hr glycol reboiler (RB-GLY)
- Adding one (1) 65 MMscfd/950 gpm amine unit (AMINE)
- Adding two (2) 38.9 MMBtu/hr amine reboilers (RB-AM1, RB-AM2)
- Adding one (1) Vapor Combustion unit (VCU)

KFOC is requesting a minor source permit under 20.2.72.200.A.2 NMAC to authorize the proposed changes. The facility will remain a synthetic minor source following the changes but will no longer be able to be authorized by the GCP-O&G due to the proposed thermal oxidizer being unable to comply with condition A208.A. of the GCP-O&G.

Process Summary

Natural gas from surrounding wellpads and tank batteries is transported via pipeline to the inlet slug catcher. Liquids from the slug catcher are sent to the gunbarrel separator (GB-1). Oil from the gunbarrel is sent to the oil storage tanks (TANK-1-3) prior to either being transported offsite via pipeline or loaded by tank truck and transported offsite on an unpaved haul road (LOAD-1, HR-1). Water from the gunbarrel is sent to the produced water tank (PWT-1) prior to being unloaded by tank truck (LOAD-2, HR-1). The storage tanks and gunbarrel emissions are captured by a vapor recovery unit (VRU-1) and re-routed to the inlet of the facility, however no emissions reduction is claimed from this process. A combustor (COMB-1) controls these emissions during VRU downtime.

Gas from the slug catcher is compressed by five (5) natural gas fired compressor engines (ENG-1-5) and then processed by the amine unit (AMINE, RB-AM1, RB-AM2) and then the glycol dehydrator (DEHY-1, RB-1) before being sent off-site.

The amine unit and glycol dehydrator are each equipped with a BTEX condenser which controls the regenerator still vents. Condenser off gases and the flash tanks are controlled by a thermal oxidizer (TO-1).

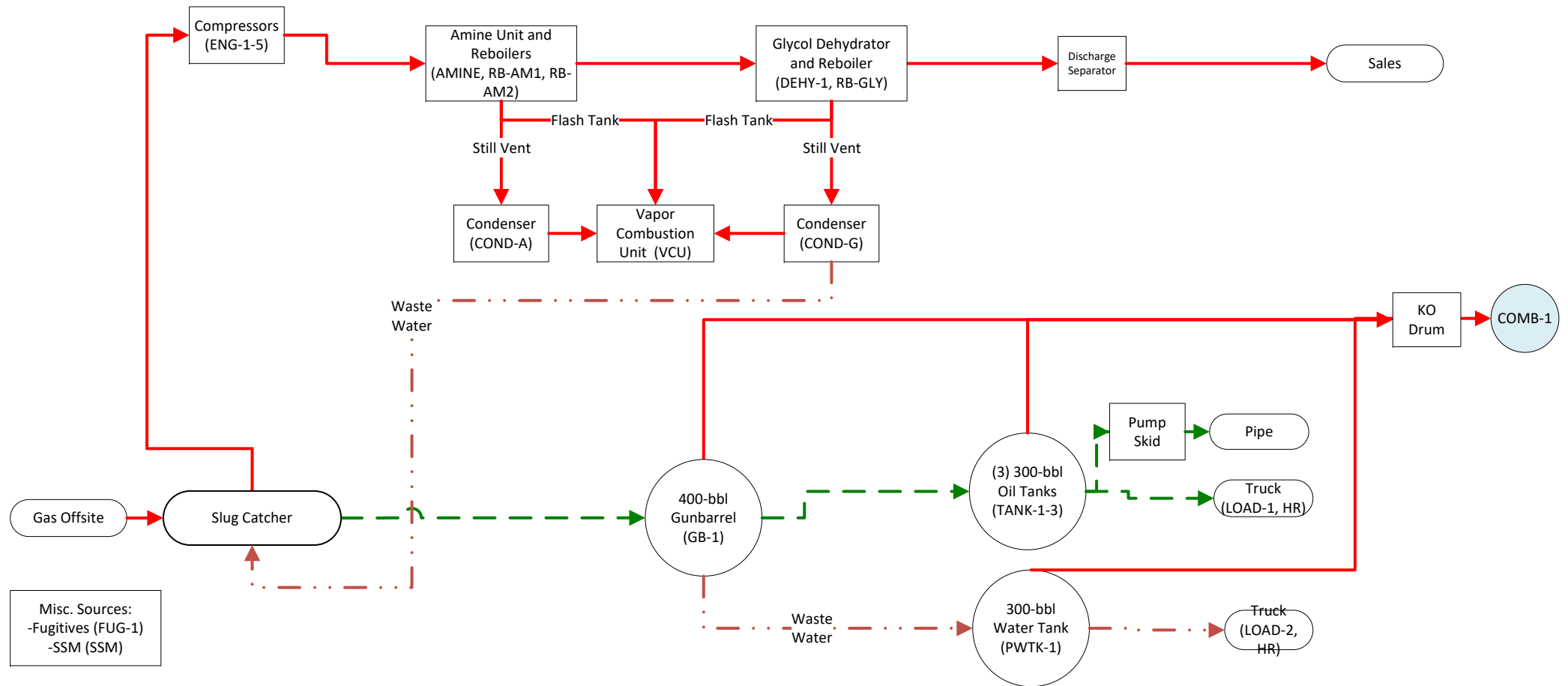
Section 4

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 is provided on the following page.

Process Flow Diagram



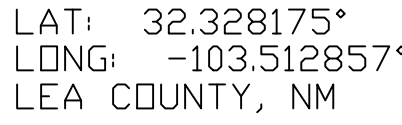
Section 5

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 is provided on the following page.

GRID SPACING 100'



KAISER FRANCIS OIL CO.

FILE PATH: C:\USERS\TACO\DOCUMENTS\KFOC\CAVALRY CS\DRAWINGS\FLATSHOTS\CAVALRY FLATSHOT 051526.DWG BY:TACO DATE:May 18, 2026 11:37am

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.

This section contains the calculations for this facility. Supporting documentation for these calculations can be found in Section 7.

EMISSIONS SUMMARY TABLE

EMISSION SOURCE DESCRIPTION	Unit Number	NOx		CO		VOC		SO ₂		PM ₁₀		PM _{2.5}		H ₂ S		HAPs	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
Caterpillar G3608 Natural Gas Compressor Engine	ENG1	2.76	12.07	2.37	10.38	2.68	11.73	0.01	0.04	0.17	0.75	0.17	0.75	-	-	0.58	2.55
Caterpillar G3608 Natural Gas Compressor Engine	ENG2	2.76	12.07	2.37	10.38	2.68	11.73	0.01	0.04	0.17	0.75	0.17	0.75	-	-	0.58	2.55
Caterpillar G3608 Natural Gas Compressor Engine	ENG3	2.76	12.07	2.37	10.38	2.68	11.73	0.01	0.04	0.17	0.75	0.17	0.75	-	-	0.58	2.55
Caterpillar G3608 Natural Gas Compressor Engine	ENG4	1.65	7.24	2.37	10.38	2.68	11.73	0.01	0.04	0.17	0.75	0.17	0.75	-	-	0.58	2.55
Caterpillar G3608 Natural Gas Compressor Engine	ENG5	1.65	7.24	2.37	10.38	2.68	11.73	0.01	0.04	0.17	0.75	0.17	0.75	-	-	0.58	2.55
Single Tip Combustor: Total Emissions	COMB-1	0.07	0.29	0.13	0.58	0.02	0.08	0.004	0.02	0.002	0.01	0.00	0.01	0.0000	0.00	0.00	0.00
Vapor Combustion Unit	VCU	6.99	30.62	6.99	30.62	6.09	26.77	11.10	48.63	0.43	1.90	0.43	1.90	0.06	0.26	0.74	3.16
65 MMscfD Amine Unit	AMINE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.57	2.49
65 MMscfD Glycol Dehydrator	DEHY	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.10	0.44
Oil Tanks: 300 bbl	TK-1 - TK-3	--	--	--	--	0.03	0.13	--	--	--	--	--	--	--	--	0.00	0.01
Water Tanks: 300 bbl	PWTK-1	--	--	--	--	0.00	0.00	--	--	--	--	--	--	--	--	0.00	0.00
Gun Barrel Vessel: 400 bbl	GB-1	--	--	--	--	0.23	1.01	--	--	--	--	--	--	--	--	0.01	0.05
1.25 MMBtu/hr Glycol Reboiler	RB-GLY	0.12	0.54	0.10	0.45	0.01	0.03	0.004	0.02	0.00931	0.04079	0.00931	0.04079	--	--	0.00	0.01
38.90 MMBtu/hr Amine Reboiler	RB-AM1	1.56	6.82	1.59	6.99	0.74	3.24	0.14	0.61	0.29	1.27	0.29	1.27	--	--	0.07	0.31
38.90 MMBtu/hr Amine Reboiler	RB-AM2	1.56	6.82	1.59	6.99	0.74	3.24	0.14	0.61	0.29	1.27	0.29	1.27	--	--	0.07	0.31
Oil Truck Loading (Uncaptured Vapors)	TL-O	--	--	--	--	55.06	0.15	--	--	--	--	--	--	0.004	0.0000	3.03	0.01
Water Truck Loading (Uncaptured Vapors)	TL-W	--	--	--	--	1.62	0.07	--	--	--	--	--	--	0.004	0.0000	1.62	0.07
Fugitives: Equipment Leaks	FUG	--	--	--	--	1.59	6.96	--	--	--	--	--	--	0.0002	0.00	0.24	1.05
Haul Road	HR	--	--	--	--	--	--	--	--	0.15	0.01	0.02	0.00	--	--	--	--
Equipment: MSS	MSS	--	--	--	--	135.69	6.04	--	--	--	--	--	--	--	--	--	--

TOTAL FACILITY WIDE EMISSIONS	NOx		CO		VOC		SO ₂		PM ₁₀		PM _{2.5}		H ₂ S		HAPs	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
	21.87	95.78	22.27	97.53	215.20	106.37	11.44	50.10	2.04	8.25	1.90	8.24	0.07	0.26	9.37	20.67

	NOx		CO		VOC		SO ₂		PM ₁₀		PM _{2.5}		H ₂ S		HAPs	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
Public Notice Emissions	24.05	105.36	24.49	107.28	236.72	117.01	12.58	55.11	2.24	9.07	2.09	9.07	0.07	0.29	10.30	22.74

HAP EMISSIONS SUMMARY TABLE

EMISSION SOURCE DESCRIPTION	Unit Number	Benzene		Toluene		Ethylbenzene		Xylene		N-Hexane		HCHO		Acrolein		Acetaldehyde		HAPs	
		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
Caterpillar G3608 Natural Gas Compressor Engine	ENG1	0.0075	0.0331	0.0070	0.0306	-	-	0.0032	0.0138	0.0019	0.0083	0.3307	1.4484	0.0882	0.3861	0.1434	0.6280	0.5818	2.5483
Caterpillar G3608 Natural Gas Compressor Engine	ENG2	0.0075	0.0331	0.0070	0.0306	-	-	0.0032	0.0138	0.0019	0.0083	0.3307	1.4484	0.0882	0.3861	0.1434	0.6280	0.5818	2.5483
Caterpillar G3608 Natural Gas Compressor Engine	ENG3	0.0075	0.0331	0.0070	0.0306	-	-	0.0032	0.0138	0.0019	0.0083	0.3307	1.4484	0.0882	0.3861	0.1434	0.6280	0.5818	2.5483
Caterpillar G3608 Natural Gas Compressor Engine	ENG4	0.0075	0.0331	0.0070	0.0306	-	-	0.0032	0.0138	0.0019	0.0083	0.3307	1.4484	0.0882	0.3861	0.1434	0.6280	0.5818	2.5483
Caterpillar G3608 Natural Gas Compressor Engine	ENG5	0.0075	0.0331	0.0070	0.0306	-	-	0.0032	0.0138	0.0019	0.0083	0.3307	1.4484	0.0882	0.3861	0.1434	0.6280	0.5818	2.5483
Single Tip Combustor: Total Emissions	COMB-1	0.0001	0.0004	0.0001	0.0003	0.0001	0.0005	0.0000	0.0002	0.0003	0.0013	0.0000	0.0002	--	--	--	--	0.0007	0.0029
Vapor Combustion Unit	VCU	0.2818	1.2345	0.1677	0.7346	0.1796	0.7866	0.0682	0.3658	0.0346	0.1482	0.0043	0.0188	--	--	--	--	0.7362	3.2884
65 MMscfD Amine Unit	AMINE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
65 MMscfD Glycol Dehydrator	DEHY	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oil Tanks: 300 bbl	TK-1 - TK-3	0.0002	0.0011	0.0002	0.0007	0.0003	0.0011	0.0001	0.0003	0.0007	0.0031	--	--	--	--	--	--	0.0015	0.0064
Water Tanks: 300 bbl	PWTK-1	0.0002	0.0007	0.0001	0.0005	0.0002	0.0007	0.0000	0.0002	0.0000	0.0000	--	--	--	--	--	--	0.0005	0.0021
Gun Barrel Vessel: 400 bbl	GB-1	0.0019	0.0085	0.0013	0.0058	0.0020	0.0086	0.0006	0.0026	0.0055	0.0242	--	--	--	--	--	--	0.0113	0.0496
1.25 MMBtu/hr Glycol Reboiler	RB-GLY	0.0000	0.0000	0.0000	0.0000	--	--	--	--	0.0022	0.0097	0.0001	0.0004	--	--	--	--	0.0023	0.0101
38.90 MMBtu/hr Amine Reboiler	RB-AM1	0.0001	0.0004	0.0001	0.0006	--	--	--	--	0.0686	0.3007	0.0029	0.0125	--	--	--	--	0.0718	0.3143
38.90 MMBtu/hr Amine Reboiler	RB-AM2	0.0001	0.0004	0.0001	0.0006	--	--	--	--	0.0686	0.3007	0.0029	0.0125	--	--	--	--	0.0718	0.3143
Oil Truck Loading (Uncaptured Vapors)	TL-O	0.4924	0.0013	0.0620	0.0002	0.0845	0.0002	0.1465	0.0004	0.1183	0.0003	--	--	--	--	--	--	3.0305	0.0081
Water Truck Loading (Uncaptured Vapors)	TL-W	0.6162	0.0272	0.3616	0.0160	0.5003	0.0221	0.1416	0.0063	0.0000	0.0000	--	--	--	--	--	--	1.6197	0.0716
Fugitives: Equipment Leaks	FUG	0.0128	0.0559	0.0246	0.1075	0.1184	0.5186	0.0414	0.1815	0.0347	0.1519	--	--	--	--	--	--	0.2400	1.0510

TOTAL FACILITY WIDE EMISSIONS	Benzene		Toluene		Ethylbenzene		Xylene		N-Hexane		HCHO		Acrolein		Acetaldehyde		HAPs	
	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
	#REF!	1.50	0.65	1.02	0.89	1.34	0.41	0.63	0.34	0.98	1.66	7.29	0.44	1.93	0.72	3.14	8.70	17.86

NO_x, CO, VOC, HCHO Emissions

EPN	Make	Model	Serial Number	Mfg/Mod Date	Regulatory	Horsepower (hp)	Operating Hours	Fuel Heating Value (BTU/scf)	Brake Specific Fuel Consumption (BTU/hp-hr)	Fuel Consumption (MMscf/yr)	Type	EMISSION FACTORS g/hp-hr				Catalyst Efficiency			
												NO _x	CO	VOC	HCHO*	NO _x	CO	VOC	HCHO
ENG1	Caterpillar	G3608	XH701678	2/1/2022	NSPS IIII	2500.00	8760.00	1158.79	6860.00	129.65	4SLB	0.50	3.87	1.11	0.27	0%	89%	64%	78%
ENG2	Caterpillar	G3608	XH701676	2/9/2022	NSPS IIII	2500.00	8760.00	1158.79	6860.00	129.65	4SLB	0.50	3.87	1.11	0.27	0%	89%	64%	78%
ENG3	Caterpillar	G3608	XH701682	2/16/2022	NSPS IIII	2500.00	8760.00	1158.79	6860.00	129.65	4SLB	0.50	3.87	1.11	0.27	0%	89%	64%	78%
ENG4	Caterpillar	G3608	TBD	Post- 7/1/2010	NSPS IIII	2500.00	8760.00	1158.79	6860.00	129.65	4SLB	0.30	3.87	1.11	0.27	0%	89%	64%	78%
ENG5	Caterpillar	G3608	TBD	Post- 7/1/2010	NSPS IIII	2500.00	8760.00	1158.79	6860.00	129.65	4SLB	0.30	3.87	1.11	0.27	0%	89%	64%	78%

EPN	Pre-Controlled (lb/hr)				Post-Controlled (lb/hr)				Pre-Controlled (tpy)				Post-Controlled (tpy)			
	NO _x	CO	VOC	HCHO	NO _x	CO	VOC	HCHO	NO _x	CO	VOC	HCHO	NO _x	CO	VOC	HCHO
ENG1	2.76	21.33	7.75	1.49	2.76	2.37	2.68	0.33	12.07	93.42	33.94	6.52	12.07	10.38	11.73	1.45
ENG2	2.76	21.33	7.75	1.49	2.76	2.37	2.68	0.33	12.07	93.42	33.94	6.52	12.07	10.38	11.73	1.45
ENG3	2.76	21.33	7.75	1.49	2.76	2.37	2.68	0.33	12.07	93.42	33.94	6.52	12.07	10.38	11.73	1.45
ENG4	1.65	21.33	7.75	1.49	1.65	2.37	2.68	0.33	7.24	93.42	33.94	6.52	7.24	10.38	11.73	1.45
ENG5	1.65	21.33	7.75	1.49	1.65	2.37	2.68	0.33	7.24	93.42	33.94	6.52	7.24	10.38	11.73	1.45

PM, SO₂, HAZARDOUS AIR POLLUTANTS (HAPs)

EPN	AP-42 Factors (lb/MMBtu)								lbs/hr								TPY									
	PM10/PM _{2.5}	SO ₂	Benzene	Toluene	Xylene	Acetaldehyde	Acrolein	n-hexane	PM10/PM _{2.5}	SO ₂	Benzene	Toluene	Xylene	Acetaldehyde	Acrolein	n-hexane	Total HAPs	PM10/PM _{2.5}	SO ₂	Benzene	Toluene	Xylene	Acetaldehyde	Acrolein	n-hexane	Total HAPs
ENG1	0.00999	0.000588	0.00044	0.000408	0.000184	0.00836	0.00514	0.00011	0.17	0.01	0.01	0.01	0.00	0.14	0.09	0.00	0.58	0.75	0.04	0.03	0.03	0.01	0.63	0.39	0.01	2.55
ENG2	0.00999	0.000588	0.00044	0.000408	0.000184	0.00836	0.00514	0.00011	0.17	0.01	0.01	0.01	0.00	0.14	0.09	0.00	0.58	0.75	0.04	0.03	0.03	0.01	0.63	0.39	0.01	2.55
ENG3	0.00999	0.000588	0.00044	0.000408	0.000184	0.00836	0.00514	0.00011	0.17	0.01	0.01	0.01	0.00	0.14	0.09	0.00	0.58	0.75	0.04	0.03	0.03	0.01	0.63	0.39	0.01	2.55
ENG4	0.00999	0.000588	0.00044	0.000408	0.000184	0.00836	0.00514	0.00011	0.17	0.01	0.01	0.01	0.00	0.14	0.09	0.00	0.58	0.75	0.04	0.03	0.03	0.01	0.63	0.39	0.01	2.55
ENG5	0.00999	0.000588	0.00044	0.000408	0.000184	0.00836	0.00514	0.00011	0.17	0.01	0.01	0.01	0.00	0.14	0.09	0.00	0.58	0.75	0.04	0.03	0.03	0.01	0.63	0.39	0.01	2.55

Footnotes:

* HCHO and Acetaldehyde have been added to the lb/hr and TPY values for VOC

* PM emissions = PM₁₀ + PM_{2.5} + PM_{unabated}

* AP-42 Chapter 3.2, specific emission factor is based on engine type (4-stroke rich burn, 4-stroke lean burn, 2-stroke lean burn)

* NO_x, CO, VOC, and Formaldehyde Based on Manufacture Data

Kaiser-Francis Oil Company
Cavalry Compressor Station
9530M2

GHG Emissions

												EMISSION FACTORS		
EPN	Make	Model	Serial Number	Mfg/Mod Date	Regulatory	Horsepower (hp)	Operating Hours	Fuel Heating Value (BTU/scf)	Brake Specific Fuel Consumption (BTU/hp-hr)	Fuel Consumption (MMscf/yr)	Type	CO2 ¹ (g/hp-hr)	CH4 ² (kg/MMBtu)	N2O ³ (kg/MMBtu)
ENG1	Caterpillar	G3608	XH701678	2/1/2022	NSPS IIJJJ	2500.00	8760.00	1158.79	6860.00	129.65	4SLB	438.00	0.52	1.00E-04
ENG2	Caterpillar	G3608	XH701676	2/9/2022	NSPS IIJJJ	2500.00	8760.00	1158.79	6860.00	129.65	4SLB	438.00	0.52	1.00E-04
ENG3	Caterpillar	G3608	XH701682	2/16/2022	NSPS IIJJJ	2500.00	8760.00	1158.79	6860.00	129.65	4SLB	438.00	0.52	1.00E-04
ENG4	Caterpillar	G3608	TBD	Post-7/1/2010	NSPS IIJJJ	2500.00	8760.00	1158.79	6860.00	129.65	4SLB	435.00	0.52	1.00E-04
ENG5	Caterpillar	G3608	TBD	Post-7/1/2010	NSPS IIJJJ	2500.00	8760.00	1158.79	6860.00	129.65	4SLB	435.00	0.52	1.00E-04

Total GHG Mass Basis (TPY)				Total CO2e (TPY) ⁴			
EPN	CO2	CH4	N2O	CO2	CH4	N2O	TOTAL
ENG1	10573.41	86.26	0.02	10573.41	2156.61	4.92	12,734.95
ENG2	10573.41	86.26	0.02	10573.41	2156.61	4.92	12,734.95
ENG3	10573.41	86.26	0.02	10573.41	2156.61	4.92	12,734.95
ENG4	10500.99	86.26	0.02	10500.99	2156.61	4.92	12,662.53
ENG5	10500.99	86.26	0.02	10500.99	2156.61	4.92	12,662.53

Footnotes:

1. CO2 emission factor from manufacturer data
2. CH4 emission factor from Table W-7 of 40 CFR Part 98 Subpart W
3. N2O emission factor from Table C-2 of 40 CFR Part 98 Subpart C
4. Total CO2e determined by multiplying individual pollutants by GWP which are 1, 25, and 298 for CO2, CH4, and N2O respectively.

CRITERIA & REGULATED POLLUTANTS

Source ID	Fuel Gas (BTU/SCF)	Operating Hours	Burner Rating (MMBTU/Hr)	AP-42 Factors ^{1,2} lb/MMSCF or lb/MMBtu					lb/hr					tpy				
				NOx	CO	VOC	SO ₂ ²	PM _{10 & 2.5}	NOx	CO	VOC	SO ₂	PM _{10 & 2.5}	NOx	CO	VOC	SO ₂	PM _{10 & 2.5}
RB-GLY	1158.79	8760	1.25	114	95	6.2	-	0.0075	0.12	0.10	0.01	0.00	0.01	0.54	0.45	0.03	0.02	0.04
RB-AM1	1159	8760	38.90	0.040	0.041	0.019	-	0.0075	1.56	1.59	0.74	0.14	0.29	6.82	6.99	3.24	0.61	1.27
RB-AM2	1159	8760	38.90	0.040	0.041	0.019	-	0.0075	1.56	1.59	0.74	0.14	0.29	6.82	6.99	3.24	0.61	1.27

*Source: AP-42 Table 1.4-1, 1.4-2, & 1.4-3

Total (tpy)	NOx	CO	VOC	SO ₂	PM _{10 & 2.5}
	14.17	14.42	6.50	1.24	2.58

1. Factors are adjusted for Site Fuel Heating Value: Example Calculation - NOx Factor = 100 * 1159/ 1020 = 114 lb/MMSCF
2. Factors are adjusted for Site Fuel Heating Value using H2S mass balance. Assumed 100% conversion of H2S to SO2.

HAZARDOUS AIR POLLUTANTS (HAPs)

Source ID	Fuel Gas (BTU/SCF)	Operating Hours	Burner Rating (MMBTU/Hr)	AP-42 Factors ¹ lb/MMSCF					lb/hr					tpy				
				Benzene	Toluene	N-Hexane	HCHO	Dichlorobenz.	Benzene	Toluene	N-Hexane	HCHO	Dichlorobenz.	Benzene	Toluene	N-Hexane	HCHO	Dichloroben.
RB-GLY	1159	8760	1.25	0.00239	0.00386	2.04492	0.08520	0.00136	0.00000	0.00000	0.00221	0.00009	1.47E-06	0.00001	0.00002	0.00966	0.00040	0.00001
RB-AM1	1159	8760	38.90	0.00239	0.00386	2.04492	0.08520	0.00136	0.00008	0.00013	0.06865	0.00286	4.58E-05	0.00035	0.00057	0.30067	0.01253	0.00020
RB-AM2	1159	8760	38.90	0.00239	0.00386	2.04492	0.08520	0.00136	0.00008	0.00013	0.06865	0.00286	4.58E-05	0.00035	0.00057	0.30067	0.01253	0.00020

*Source: AP-42 Table 1.4-1, 1.4-2, & 1.4-3

Total Individual HAPS (tpy)	Benzene	Toluene	Hexane	HCHO	Dichlorobenz.
	0.000713	0.001154	0.611010	0.025459	0.000407

1. Factors are adjusted for Site Fuel Heating Value: Example Calculation - NOx Factor = 100 * 1159/ 1020 = 114 lb/MMSCF
2. RB-GLY uses AP-42 emission factors. RB-AM1-2 use manufacturer data emission factors.

Total Combined HAPS (tpy)	0.64
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Kaiser-Francis Oil Company
Cavalry Compressor Station
9530M2

HEATER GHG

Source ID	Fuel Gas (BTU/SCF)	Operating Hours	Burner Rating (MMBTU/Hr)	Emission Factors ¹ kg/MMBtu			TPY			CO2e TPY		
				CO ₂	CH ₄	N ₂ O	CO ₂	CH ₄	N ₂ O	CO ₂	CH ₄	N ₂ O
RB-GLY	1159	8760	1.25	53.06	0.001	0.0001	639.11	0.01	0.00	639.11	0.30	0.36
RB-AM1	1159	8760	38.90	53.06	0.001	0.0001	19889.03	0.37	0.04	19889.03	9.37	11.17
RB-AM2	1159	8760	38.90	53.06	0.001	0.0001	19889.03	0.37	0.04	19889.03	9.37	11.17

1. Emission factors from Tables C-1 and C-2 of 40 CFR Part 98 Subpart C

TANK COMBUSTOR HOURLY EMISSIONS (COMB-1)

Normal Hourly Emission Rates and Composition to Combustor ^a								Criteria Pollutant Emissions from Combustor		
Component	Pilot ^c				Total (precontrols) ^b	Destruction Efficiency	Flare Exhaust (controlled)	Component	Emission Factor	Emission Factor Units
		Oil Tank Vapors	Water Tank Vapors	Gun Barrel Vapors						
Promax Stream Name	Plant Gas Inlet	Oil TK Vapors	WT Vapors	Gun Barrel Vapors	(lb/hr)	(%)	(lb/hr)			
TEG	0.00	0.00	0.00	0.00	0.00	0%	0.00	NOX	0.138	lb/MMBtu
Water	0.00	0.03	0.02	0.23	0.00	0%	0.00	CO	0.2755	lb/MMBtu
Hydogen Sulfide	0.00	0.00	0.00	0.00	0.00	98%	0.00	PM10	7.60	lb/MMscf
Nitrogen	0.41	0.00	0.00	0.07	0.41	0%	0.41	PM2.5	7.60	lb/MMscf
Carbon Dioxide	1.44	0.24	0.14	3.52	1.44	0%	1.44	HCHO	0.135	lb/MMscf
Methane	2.86	0.05	0.00	1.95	2.86	98%	0.06			
Ethane	0.61	0.27	0.01	2.24	0.61	98%	0.01			
Propane	0.47	0.54	0.01	4.28	0.47	98%	0.01			
Isobutane	0.07	0.12	0.00	0.95	0.07	98%	0.00			
n-Butane	0.17	0.34	0.00	2.67	0.17	98%	0.00			
2,2 Dimethylpropane	0.00	0.00	0.00	0.03	0.00	98%	0.00			
Isopentane	0.05	0.13	0.00	0.99	0.05	98%	0.00			
n-Pentane	0.05	0.13	0.00	1.01	0.05	98%	0.00			
2,2 Dimethylbutane	0.00	0.00	0.00	0.01	0.00	98%	0.00			
Cyclopentane	0.00	0.00	0.00	0.00	0.00	98%	0.00			
2,3 Dimethylbutane	0.00	0.01	0.00	0.08	0.00	98%	0.00			
2 Methylpentane	0.01	0.03	0.00	0.24	0.01	98%	0.00			
3 Methylpentane	0.01	0.02	0.00	0.15	0.01	98%	0.00			
Methylcyclopentane	0.01	0.01	0.00	0.10	0.01	98%	0.00			
Cyclohexane	0.00	0.01	0.00	0.08	0.00	98%	0.00			
2-Methylhexane	0.00	0.00	0.00	0.04	0.00	98%	0.00			
3-Methylhexane	0.00	0.01	0.00	0.05	0.00	98%	0.00			
Methylcyclohexane	0.00	0.01	0.00	0.07	0.00	98%	0.00			
Heptanes	0.00	0.01	0.00	0.06	0.00	98%	0.00			
Octanes	0.01	0.01	0.00	0.10	0.01	98%	0.00			
Nonanes	0.00	0.00	0.00	0.02	0.00	98%	0.00			
Decanes Plus A	0.00	0.00	0.00	0.00	0.00	98%	0.00			
Benzene	0.00	0.01	0.01	0.10	0.00	98%	0.00			
Toluene	0.00	0.01	0.01	0.07	0.00	98%	0.00			
E-Benzene	0.01	0.01	0.01	0.10	0.01	98%	0.00			
M & P Xylenes	0.00	0.00	0.00	0.01	0.00	98%	0.00			
O-Xylene	0.00	0.00	0.00	0.02	0.00	98%	0.00			
n-Hexane	0.01	0.04	0.00	0.28	0.01	98%	0.00			
2,2,4 Trimethylpentane	0.00	0.00	0.00	0.03	0.00	98%	0.00			
Total ^b	6.24	-	-	-	6.24		1.94			
Total VOC ^b	0.91	-	-	-	0.91		0.02			
Total HAP ^b	0.03	-	-	-	0.03		0.00			
Molecular Weight	23.70	45.67	40.01	39.39	-					
Heating Value (Btu/scf)	1015.92	2245.61	549.68	1815.93	1839.3					
Volumetric Flow (scf/hr)	100.0	17.1	2.0	188.3	207					
Heat Release (MMBtu/hr)	0.10	0.04	0.00	0.34	0.343					
H2S PPM	35.95	85.98	569.36	73.37	-					
Emission Type	Steady	Steady	Steady	Steady	-					

Combustion Emissions from Combustor					Totals
	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Total Nox	0.01	0.01	0.00	0.05	0.07
Total CO	0.03	0.01	0.00	0.09	0.13
Total SO2	0.0004	0.00	0.00	0.00	0.00
Total PM ₁₀	0.0008	0.00	0.00	0.00	0.00
Total PM _{2.5}	0.0008	0.00	0.00	0.00	0.00
HCHO	0.00	0.00	0.00	0.00	0.00

Footnotes:

^a Uncontrolled stream properties determined via ProMax based on max temperature.

^b Storage tank emissions are represented at the storage tanks, only included in this table for their contribution to the combustion emissions.

^c Pilot fuel gas/purge gas emissions are calculated based on a 100 scfh flow rate.

^d Flare CO and NOx emission factors from TCEQ Air Permit Technical Guidance for Chemical Sources (RG-360A/11 or APD-ID 6v1). PM10, PM2.5, HCHO emission factors from AP-

TANK COMBUSTOR ANNUAL EMISSIONS (COMB-1)

Annual Emission Rates and Composition to Flare ^a								Criteria Pollutant Emissions from Flare ^d		
Component	Pilot ^c				Total (precontrols) ^b	Destruction Efficiency	Flare Exhaust (controlled)	Component	Emission Factor	Emission Factor Units
		Oil Tank Vapors	Water Tank Vapors	Gun Barrel Vapors						
Promax Stream Name	Plant Gas Inlet	Oil TK Vapors	WT Vapors	Gun Barrel Vapors	(TPY)	(%)	(TPY)			
TEG	0.00	0.00	0.00	0.00	0.00	0%	0.00	NOX	0.138	lb/MMBtu
Water	0.00	0.12	0.08	0.99	0.00	0%	0.00	CO	0.2755	lb/MMBtu
Hydrogen Sulfide	0.00	0.00	0.00	0.01	0.00	98%	0.00	PM10	7.60	lb/MMscf
Nitrogen	1.79	0.00	0.00	0.33	1.79	0%	1.79	PM2.5	7.60	lb/MMscf
Carbon Dioxide ^a	6.32	1.06	0.60	15.42	6.32	0%	6.32	HCHO	0.135	lb/MMscf
Methane	12.51	0.20	0.02	8.52	12.51	98%	0.25			
Ethane	2.69	1.19	0.03	9.81	2.69	98%	0.05			
Propane	2.07	2.36	0.04	18.75	2.07	98%	0.04			
Isobutane	0.30	0.53	0.01	4.16	0.30	98%	0.01			
n-Butane	0.74	1.49	0.02	11.68	0.74	98%	0.01			
2,2 Dimethylpropane	0.01	0.01	0.00	0.11	0.01	98%	0.00			
Isopentane	0.24	0.56	0.01	4.35	0.24	98%	0.00			
n-Pentane	0.24	0.57	0.00	4.44	0.24	98%	0.00			
2,2 Dimethylbutane	0.00	0.00	0.00	0.04	0.00	98%	0.00			
Cyclopentane	0.00	0.00	0.00	0.00	0.00	98%	0.00			
2,3 Dimethylbutane	0.02	0.05	0.00	0.37	0.02	98%	0.00			
2 Methylpentane	0.06	0.14	0.00	1.06	0.06	98%	0.00			
3 Methylpentane	0.04	0.09	0.00	0.67	0.04	98%	0.00			
Methylcyclopentane	0.02	0.06	0.00	0.45	0.02	98%	0.00			
Cyclohexane	0.02	0.04	0.00	0.34	0.02	98%	0.00			
2-Methylhexane	0.01	0.02	0.00	0.17	0.01	98%	0.00			
3-Methylhexane	0.01	0.03	0.00	0.21	0.01	98%	0.00			
Methylcyclohexane	0.02	0.04	0.00	0.33	0.02	98%	0.00			
Heptanes	0.02	0.04	0.00	0.28	0.02	98%	0.00			
Octanes	0.03	0.06	0.00	0.44	0.03	98%	0.00			
Nonanes	0.01	0.01	0.00	0.10	0.01	98%	0.00			
Decanes Plus A	0.02	0.00	0.00	0.00	0.02	98%	0.00			
Benzene	0.02	0.05	0.03	0.42	0.02	98%	0.00			
Toluene	0.01	0.04	0.02	0.29	0.01	98%	0.00			
E-Benzene	0.02	0.06	0.04	0.43	0.02	98%	0.00			
M & P Xylenes	0.00	0.01	0.00	0.05	0.00	98%	0.00			
O-Xylene	0.00	0.01	0.01	0.07	0.00	98%	0.00			
n-Hexane	0.07	0.16	0.00	1.21	0.07	98%	0.00			
2,2,4 Trimethylpentane	0.01	0.01	0.00	0.12	0.01	98%	0.00			
Total	27.32	-	-	-	27.32		8.50			
Total VOC	4.01	-	-	-	4.01		0.08			
Total HAP	0.14	-	-	-	0.14		0.00			
Operating Hours (Hrs)	8,760	8,760	8,760	8,760	--					
Molecular Weight	23.70	45.67	40.01	39.39	--					
Heating Value (Btu/scf)	1015.92	2245.61	549.68	1815.93	1839.3					
Volumetric Flow (scf/hr)	100.0	17.1	2.0	188.3	207					
Volumetric Flow (MMscf/yr)	0.9	0.1495	0.0172	1.6498	1.82					
Heat Release (MMBtu/yr)	889.94	335.79	9.48	2995.98	3,341.25					
H2S PPM	35.95	85.98	569.36	73.37						
Emission Type	Steady	Steady	Steady	Steady						

Combustion Emissions from Combustor					Totals
	(TPY)	(TPY)	(TPY)	(TPY)	(TPY)
Total NOx	0.06	0.02	0.00	0.21	0.29
Total CO	0.12	0.05	0.00	0.41	0.58
Total SO2	0.002	0.00	0.00	0.01	0.02
Total PM ₁₀	0.003	0.00	0.00	0.01	0.01
Total PM _{2.5}	0.003	0.00	0.00	0.01	0.01
HCHO	0.000	0.00	0.00	0.00	0.00

Footnotes:

^a Uncontrolled stream properties determined via ProMax.

^b Storage tank emissions are represented at the storage tanks, only included in this table for their contribution to the combustion emissions.

^c Pilot fuel gas/purge gas emissions are calculated based on a 100 scfh flow rate.

^d Flare CO and NOx emission factors from TCEQ Air Permit Technical Guidance for Chemical Sources (RG-360A/11 or APD-ID 6v1). PM10, PM2.5, HCHO emission factors from AP-42, Table 1.4-1 and 1.4-2, July 1998. SO2 emissions assume 100% conversion of H2S to SO2.

Kaiser-Francis Oil Company
Cavalry Compressor Station
9530M2

TANK COMBUSTOR GHG EMISSIONS (COMB-1)

Component	Pilot			
		Oil Tank Vapors	Water Tank Vapors	Gun Barrel Vapors
Promax Stream Name	Plant Gas Inlet	Oil TK Vapors	WT Vapors	Gun Barrel Vapors
	(mol%)	(mol%)	(mol%)	(mol%)
TEG	0.00	0.00	0.00	0.00
Water	0.00	3.41	19.93	2.53
Hydrogen Sulfide	0.00	0.01	0.07	0.01
Nitrogen	5.56	0.03	0.05	0.54
Carbon Dioxide*	12.46	12.28	59.80	16.12
Methane	67.65	6.36	4.30	24.44
Ethane	7.75	20.08	4.12	15.01
Propane	4.07	27.16	3.81	19.56
Isobutane	0.44	4.62	0.47	3.30
n-Butane	1.11	13.00	1.64	9.25
2,2 Dimethylpropane	0.01	0.10	0.01	0.07
Isopentane	0.29	3.91	0.36	2.77
n-Pentane	0.29	4.00	0.14	2.83
2,2 Dimethylbutane	0.00	0.03	0.00	0.02
Cyclopentane	0.00	0.00	0.00	0.00
2,3 Dimethylbutane	0.02	0.28	0.01	0.20
2 Methylpentane	0.06	0.80	0.01	0.56
3 Methylpentane	0.04	0.51	0.02	0.36
Methylcyclopentane	0.02	0.35	0.07	0.25
Cyclohexane	0.02	0.26	0.13	0.19
2-Methylhexane	0.01	0.11	0.00	0.08
3-Methylhexane	0.01	0.14	0.00	0.10
Methylcyclohexane	0.02	0.22	0.05	0.15
Heptanes	0.01	0.19	0.00	0.13
Octanes	0.02	0.25	0.00	0.18
Nonanes	0.01	0.05	0.00	0.04
Decanes Plus A	0.01	0.00	0.00	0.00
Benzene	0.02	0.35	1.96	0.25
Toluene	0.01	0.20	1.13	0.14
E-Benzene	0.02	0.26	1.45	0.19
M & P Xylenes	0.00	0.03	0.18	0.02
O-Xylene	0.00	0.05	0.25	0.03
n-Hexane	0.07	0.91	0.02	0.65
2,2,4 Trimethylpentane	0.01	0.07	0.00	0.05
Molecular Weight	23.70	45.67	40.01	39.39
Heating Value (Btu/scf)	1015.92	2245.61	549.68	1815.93
Volumetric Flow (MMscf/yr)	0.88	0.1495	0.0172	1.6498
Heat Release (MMBtu/yr)	889.94	335.79	9.48	2995.98
CH ₄ (scf/yr) ¹	11,852	-	-	-
CO ₂ (scf/yr) ²	1,022,372	404,879	20,706	3,653,949

Combustion Emissions from Combustor				
	(TPY)	(TPY)	(TPY)	(TPY)
Total CO ₂ ³	59.15	23.43	1.20	211.42
Total CH ₄ ³	0.25	-	-	-
Total CH ₄ (CO ₂ e) ⁴	6.26	-	-	-
Total N ₂ O ⁵	0.000	0.000	0.000	0.000
Total N ₂ O (CO ₂ e) ⁴	0.029	0.011	0.000	0.098

Footnotes:

1. Methane volume determined using Equation W-19 from 40 CFR Part 98 Subpart W. Tank methane is included with the tanks
2. Carbon dioxide volume determined using Equation W-20 from 40 CFR Part 98 Subpart W.
3. Calculated using Equation W-36 from 40 CFR Part 98 Subpart W
4. Calculated by multiplying by GWP, 25 for methane and 298 for N₂O
5. Calculated using Equation W-40 from 40 CFR Part 98 Subpart W

VCU NORMAL HOURLY EMISSIONS

Normal Hourly Emission Rates and Composition to VCU ^{a,b}									
Component	Pilot ^c	Assist Gas ^c	Amine Still Vent - Post Condenser	Amine Flash Tank	Dehy Still Vent - Post Condenser	Dehy Flash Tank	TOTAL Uncontrolled ^a	Destruction Efficiency	Combustor Exhaust (controlled)
Promax Stream Name	VCU Pilot (lb/hr)	VCU Assist (lb/hr)	To TO (lb/hr)	24 (lb/hr)	5 (lb/hr)	Flash Gas (lb/hr)	(lb/hr)	(%)	(lb/hr)
TEG	0.00	0.02	0.00	0.00	0.00	0.00	0.02	0%	0.02
Water	0.00	0.18	1372.15	176.45	2.29	0.27	1551.34	0%	1551.34
Hydrogen Sulfide	0.00	0.00	5.79	0.17	0.00	0.00	5.96	99.0%	0.06
Nitrogen	1.27	181.94	0.01	12.90	0.01	1.39	197.53	0.0%	197.53
Carbon Dioxide	0.00	0.00	35640.21	3288.21	0.00	0.00	38928.42	0.0%	38928.42
Methane	8.82	1264.56	2.70	293.67	1.84	32.38	1603.97	99.0%	16.04
Ethane	1.89	271.03	1.52	78.74	4.01	16.94	374.13	99.0%	3.74
Propane	1.46	209.13	0.68	44.05	8.20	17.64	281.16	99.0%	2.81
Isobutane	0.21	30.00	0.06	4.68	1.59	2.61	39.14	99.0%	0.39
n-Butane	0.52	74.70	0.27	14.75	6.83	7.86	104.93	99.0%	1.05
2,2 Dimethylpropane	0.00	0.69	0.00	0.05	0.04	0.06	0.85	99.0%	0.01
Isopentane	0.17	24.27	0.01	1.67	2.86	2.48	31.45	99.0%	0.31
n-Pentane	0.17	24.15	0.02	2.31	3.43	2.68	32.76	99.0%	0.33
2,2 Dimethylbutane	0.00	0.20	0.00	0.02	0.03	0.02	0.27	99.0%	0.00
Cyclopentane	0.00	0.00	0.00	0.00	0.00	0.00	0.00	99.0%	0.00
2,3 Dimethylbutane	0.01	1.95	0.00	0.15	0.33	0.22	2.65	99.0%	0.03
2 Methylpentane	0.04	5.66	0.00	0.41	0.81	0.60	7.53	99.0%	0.08
3 Methylpentane	0.03	5.99	0.00	0.26	0.61	0.40	4.90	99.0%	0.05
Methylcyclopentane	0.04	6.32	0.01	0.45	3.18	0.91	10.92	99.0%	0.11
Cyclohexane	0.01	1.77	0.07	0.76	0.75	0.24	3.59	99.0%	0.04
2-Methylhexane	0.01	0.95	0.00	0.03	0.12	0.09	1.20	99.0%	0.01
3-Methylhexane	0.01	1.20	0.00	0.04	0.17	0.12	1.54	99.0%	0.02
Methylcyclohexane	0.01	1.83	0.01	0.30	0.50	0.21	2.87	99.0%	0.03
Heptanes	0.01	1.67	0.00	0.05	0.21	0.17	2.11	99.0%	0.02
Octanes	0.02	3.11	0.00	0.10	0.23	0.27	3.74	99.0%	0.04
Nonanes	0.01	1.06	0.00	0.01	0.05	0.08	1.21	99.0%	0.01
Decanes Plus A	0.01	2.01	0.00	0.00	0.03	0.08	2.14	99.0%	0.02
Benzene	0.01	1.44	16.02	6.65	3.79	0.28	28.18	99.0%	0.28
Toluene	0.01	0.94	9.75	3.92	1.99	0.16	16.77	99.0%	0.17
E-Benzene	0.01	1.52	9.41	5.08	1.69	0.24	17.96	99.0%	0.18
M-Xylenes	0.00	0.20	1.60	0.68	0.21	0.03	2.71	99.0%	0.03
P-Xylene	0.00	0.27	1.63	0.69	0.20	0.03	2.82	99.0%	0.03
O-Xylene	0.00	0.27	0.64	0.27	0.10	0.01	1.28	99.0%	0.01
n-Hexane	0.02	2.36	0.00	0.47	0.37	0.25	3.46	99.0%	0.03
2,2,4 Trimethylpentane	0.00	0.00	0.00	0.03	0.08	0.06	0.18	99.0%	0.00
Total	14.78	2118.97	37062.55	3938.02	46.57	88.79	43269.67		40703.23
Total VOC	2.80	401.24	40.17	87.88	38.42	37.81	608.31		6.09
Total HAP	0.05	6.99	39.05	17.78	8.42	1.07	73.37		0.74
Operating Hours (Hrs)	8,760	8,760	8,760	8,760	8,760	8,760			
Molecular Weight	20.78	20.78	41.79	36.63	48.00	26.52			
Heating Value (Btu/scf)	1158.79	1158.79	2.48	236.04	2326.65	1405.81			
Volumetric Flow (scf/hr)	270.0	38,700.0	336543	40801	368.2	1,270.5			
Heat Release (MMBtu/hr)	0.31	44.85	0.84	9.63	0.86	1.79			
Emission Type	Steady	Steady	Steady	Steady	Steady	Steady			
Adjusted Emission Factor ^a									
PM10	8.63	8.63	0.02	1.76	17.34	10.47			
PM2.5	8.63	8.63	0.02	1.76	17.34	10.47			
HCHO	0.09	0.09	0.00	0.02	0.17	0.10			
Combustion Emissions from VCU							Totals		
	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)		
Total NOx	0.04	5.38	0.10	1.16	0.10	0.21	6.99		
Total CO	0.04	5.38	0.10	1.16	0.10	0.21	6.99		
Total SO2 ^d	0.00	0.00	10.79	0.31	0.00	0.00	11.10		
Total PM ₁₀	0.002	0.33	0.01	0.07	0.01	0.01	0.43		
Total PM _{2.5}	0.00	0.33	0.01	0.07	0.01	0.01	0.43		
HCHO	0.00	0.00	0.00	0.00	0.00	0.00	0.00		

Base Emission Factors ^d		
Component	Emission Factor	Emission Factor Units
NOX	0.12	lb/MMBtu
CO	0.12	lb/MMBtu
HCHO	0.075	lb/MMscf
PM10	7.60	lb/MMscf
PM2.5	7.60	lb/MMscf
VCU Operating Hours		8760
VCU Destruction Efficiency		99.0%
H2S molecular weight		34.08
SO2 molecular weight		64.06

Footnotes:

^a Uncontrolled stream properties determined via ProMax based on max temperature.

^b Non pilot/assist streams VOC is represented at the respective source of the stream.

^c Pilot fuel gas/assist gas emissions are calculated based on manufacturer data.

^d Flare CO and NOx emission factors from manufacturer data. SO2 emissions assume 100% conversion of H2S to SO2.

PM and formaldehyde factors based on AP-42 Table 1.4-2/3 (07/98) and adjusted in accordance with footnote "a" of the referenced tables.

VCU ANNUAL EMISSIONS

Annual Emission Rates and Composition to Combustor ^{a,b}										Base Emission Factors ^d		
Component	Pilot ^c	Assist Gas ^c	Amine Still Vent - Post Condenser	Amine Flash Tank	Dehy Still Vent - Post Condenser	Dehy Flash Tank	Total (precontrols)	Destruction Efficiency	Combustor Exhaust (controlled)	Component	Emission Factor	Emission Factor Units
Promax Stream Name	VCU Pilot	VCU Assist	To TO	24	5	Flash Gas	(TPY)	(%)	(TPY)			
	(TPY)	(TPY)	(TPY)	(TPY)	(TPY)	(TPY)	(TPY)		(TPY)			
TEG	0.00	0.07	0.00	0.00	0.00	0.00	0.07	0.0%	0.07	NOX	0.12	lb/MMBtu
Water	0.01	0.80	6010.01	772.86	10.01	1.18	6794.87	0.0%	6794.87	CO	0.12	lb/MMBtu
Hydrogen Sulfide	0.00	0.00	25.36	0.73	0.00	0.00	26.09	99.0%	0.26	HCHO	0.075	lb/MMscf
Nitrogen	5.56	796.91	0.05	56.52	0.05	6.07	865.16	0.0%	865.16	PM10	7.60	lb/MMscf
Carbon Dioxide	0.00	0.02	156104.11	14402.35	0.00	0.00	170506.49	0.0%	170506.49	PM2.5	7.60	lb/MMscf
Methane	38.64	5538.77	11.81	1286.26	8.07	141.82	7025.37	99.0%	70.25	VCU Operating Hours		8760
Ethane	8.28	1187.11	6.66	344.87	17.58	74.21	1638.71	99.0%	16.39	VCU Destruction Efficiency		99.0%
Propane	6.39	915.99	2.98	192.94	35.92	77.27	1231.49	99.0%	12.31	H2S molecular weight		34.08
Isobutane	0.92	131.39	0.25	20.48	6.96	11.42	171.42	99.0%	1.71	SO2 molecular weight		64.06
n-Butane	2.28	327.17	1.19	64.61	29.92	34.42	459.60	99.0%	4.60			
2,2 Dimethylpropane	0.02	3.03	0.00	0.22	0.18	0.26	3.71	99.0%	0.04			
Isopentane	0.74	106.29	0.03	7.31	12.53	10.86	137.76	99.0%	1.38			
n-Pentane	0.74	105.77	0.08	10.11	15.04	11.73	143.47	99.0%	1.43			
2,2 Dimethylbutane	0.01	0.89	0.00	0.07	0.12	0.09	1.18	99.0%	0.01			
Cyclopentane	0.00	0.00	0.00	0.00	0.00	0.00	0.00	99.0%	0.00			
2,3 Dimethylbutane	0.06	8.55	0.00	0.64	1.43	0.95	11.63	99.0%	0.12			
2 Methylpentane	0.17	24.79	0.01	1.82	3.57	2.63	32.98	99.0%	0.33			
3 Methylpentane	0.11	15.74	0.01	1.15	2.69	1.75	21.45	99.0%	0.21			
Methylcyclopentane	0.19	27.67	0.05	1.98	13.92	3.99	47.81	99.0%	0.48			
Cyclohexane	0.05	7.74	0.29	3.33	3.27	1.04	15.73	99.0%	0.16			
2-Methylhexane	0.03	4.16	0.00	0.13	0.52	0.42	5.26	99.0%	0.05			
3-Methylhexane	0.04	5.24	0.00	0.16	0.77	0.54	6.74	99.0%	0.07			
Methylcyclohexane	0.06	8.03	0.04	1.32	2.19	0.93	12.55	99.0%	0.13			
Heptanes	0.05	7.30	0.00	0.22	0.94	0.73	9.23	99.0%	0.09			
Octanes	0.10	13.62	0.00	0.45	1.02	1.17	16.36	99.0%	0.16			
Nonanes	0.03	4.64	0.00	0.06	0.23	0.33	5.29	99.0%	0.05			
Decanes Plus A	0.06	8.78	0.00	0.01	0.15	0.37	9.37	99.0%	0.09			
Benzene	0.04	6.32	70.16	29.13	16.59	1.21	123.45	99.0%	1.23			
Toluene	0.03	4.12	42.69	17.18	8.73	0.72	73.46	99.0%	0.73			
E-Benzene	0.05	6.64	41.23	22.27	7.40	1.07	78.66	99.0%	0.79			
M Xylenes	0.01	0.88	7.01	2.96	0.91	0.13	11.89	99.0%	0.12			
P Xylenes	0.01	1.19	7.13	3.01	0.88	0.13	12.34	99.0%	0.12			
O-Xylene	0.01	1.19	7.13	3.01	0.88	0.13	12.34	99.0%	0.12			
n-Hexane	0.07	10.32	2.78	1.17	0.43	0.05	14.82	99.0%	0.15			
2,2,4 Trimethylpentane	0.00	0.00	0.01	2.04	1.61	1.11	4.78	99.0%	0.05			
Total	64.75	9281.09	162341.09	17251.38	204.50	388.74	189531.55		178280.24			
Total VOC	12.26	1757.41	183.09	387.79	168.78	165.45	2674.78		26.77			
Total HAP	0.21	30.63	178.15	80.76	37.42	4.55	331.74		3.34			
Operating Hours (Hrs)	8,760	8,760	8,760	8,760	8,760	8,760	—					
Molecular Weight	20.78	20.78	41.79	36.63	48.00	26.52	—					
Heating Value (Btu/scf)	1158.79	1158.79	2.48	236.04	2326.65	1405.81	134.9					
Volumetric Flow (scf/hr)	270.0	38,700.0	336,542.9	40,801.1	368.2	1,270.5	416,412					
Volumetric Flow (MMscf/yr)	2.37	339.0	2,948.1	357.4177	3,225.3	11.1	3,647.77					
Heat Release (MMBtu/hr)	0.31	44.85	0.84	9.63	0.86	1.79	56.17					
Emission Type	Steady	Steady	Steady	Steady	Steady	Steady						
Adjusted Emission Factor ^a										Totals		
PM10	8.63	8.63	0.02	1.76	17.34	10.47						
PM2.5	8.63	8.63	0.02	1.76	17.34	10.47						
HCHO	0.09	0.09	0.00	0.02	0.17	0.10						
Combustion Emissions from Flare										Totals		
	(TPY)	(TPY)	(TPY)	(TPY)	(TPY)	(TPY)	(TPY)		(TPY)			
Total NOx	0.16	23.57	0.44	5.06	0.45	0.94	30.62					
Total CO	0.16	23.57	0.44	5.06	0.45	0.94	30.62					
Total SO2	0.00	0.00	47.26	1.36	0.00	0.00	48.63					
Total PM10	0.01	1.46	0.03	0.31	0.03	0.06	1.90					
Total PM2.5	0.01	1.46	0.03	0.31	0.03	0.06	1.90					
HCHO	0.00	0.01	0.00	0.00	0.00	0.00	0.02					

Footnotes:

^a Uncontrolled stream properties determined via ProMax based on max temperature.

^b Non pilot/assist streams VOC is represented at the respective source of the stream.

^c Pilot fuel gas/assist gas emissions are calculated based on manufacturer data.

^d Flare CO and NOx emission factors from manufacturer data. SO2 emissions assume 100% conversion of H2S to SO2.

^e PM and formaldehyde factors based on AP-42 Table 1.4-2/3 (07/98) and adjusted in accordance with footnote "a" of the referenced tables.

VCU ANNUAL EMISSIONS

Annual Emission Rates and Composition to Combustor						
Component	Pilot ^c	Assist Gas ^c	Amine Still Vent - Post Condenser	Amine Flash Tank	Dehy Still Vent - Post Condenser	Dehy Flash Tank
Promax Stream Name	VCU Pilot	VCU Assist	To TO	24	5	Flash Gas
	mol%	mol%	mol%	mol%	mol%	mol%
TEG	0.00	0.00	0.00	0.00	0.00	0.00
Water	0.01	0.01	8.59	9.11	13.08	0.45
Hydogen Sulfide	0.00	0.00	0.02	0.00	0.00	0.00
Nitrogen	6.37	6.37	0.00	0.43	0.05	1.48
Carbon Dioxide	0.00	0.00	91.32	69.49	0.00	0.00
Methane	77.29	77.29	0.02	17.03	11.83	60.28
Ethane	8.84	8.84	0.01	2.44	13.76	16.83
Propane	4.65	4.65	0.00	0.93	19.17	11.95
Isobutane	0.51	0.51	0.00	0.07	2.82	1.34
n-Butane	1.26	1.26	0.00	0.24	12.11	4.04
2,2 Dimethylpropane	0.01	0.01	0.00	0.00	0.06	0.02
Isopentane	0.33	0.33	0.00	0.02	4.09	1.03
n-Pentane	0.33	0.33	0.00	0.03	4.90	1.11
2,2 Dimethylbutane	0.00	0.00	0.00	0.00	0.03	0.01
Cyclopentane	0.00	0.00	0.00	0.00	0.00	0.00
2,3 Dimethylbutane	0.02	0.02	0.00	0.00	0.39	0.08
2 Methylpentane	0.06	0.06	0.00	0.00	0.97	0.21
3 Methylpentane	0.04	0.04	0.00	0.00	0.74	0.14
Methylcyclopentane	0.07	0.07	0.00	0.00	3.89	0.32
Cyclohexane	0.02	0.02	0.00	0.01	0.91	0.08
2-Methylhexane	0.01	0.01	0.00	0.00	0.12	0.03
3-Methylhexane	0.01	0.01	0.00	0.00	0.18	0.04
Methylcyclohexane	0.02	0.02	0.00	0.00	0.52	0.06
Heptanes	0.02	0.02	0.00	0.00	0.22	0.05
Octanes	0.03	0.03	0.00	0.00	0.21	0.07
Nonanes	0.01	0.01	0.00	0.00	0.04	0.02
Decanes Plus A	0.01	0.01	0.00	0.00	0.02	0.02
Benzene	0.02	0.02	0.02	0.08	5.00	0.11
Toluene	0.01	0.01	0.01	0.04	2.23	0.05
E-Benzene	0.01	0.01	0.01	0.04	1.64	0.07
M Xylenes	0.00	0.00	0.00	0.01	0.20	0.01
P Xylenes	0.00	0.00	0.00	0.01	0.19	0.01
O-Xylene	0.00	0.00	0.00	0.00	0.09	0.00
n-Hexane	0.03	0.03	0.00	0.01	0.44	0.09
2,2,4 Trimethylpentane	0.01	0.01	0.00	0.00	0.07	0.02
Molecular Weight	20.78	20.78	41.79	36.63	48.00	26.52
Heating Value (Btu/scf)	1158.79	1158.79	2.48	236.04	2326.65	1405.81
Volumetric Flow (MMscf/yr)	2.37	339.0	2,948.1	357.4177	3.2253	11.1
Heat Release (MMBtu/hr)	0.31	44.85	0.84	9.63	0.86	1.79
CH ₄ (scf/yr) ¹	18,282	2,620,389	-	-	-	-
CO ₂ (scf/yr) ²	2,841,599	407,295,884	2,700,409,325	344,669,742	9,339,743	18,672,275
Combustion Emissions from VCU						
	(TPY)	(TPY)	(TPY)	(TPY)	(TPY)	(TPY)
Total CO ₂ ³	164.41	23566.14	156245.68	19942.59	540.40	1080.38
Total CH ₄ ³	0.39	55.34	-	-	-	-
Total CH ₄ (CO ₂ e) ⁴	9.65	1383.57	-	-	-	-
Total N ₂ O ⁵	0.00	0.04	0.00	0.01	0.00	0.00
Total N ₂ O (CO ₂ e) ⁴	0.09	12.88	0.24	2.77	0.25	0.51

Footnotes:

1. Methane volume determined using Equation W-19 from 40 CFR Part 98 Subpart W. Amine and Dehy methane are included with their respective units
2. Carbon dioxide volume determined using Equation W-20 from 40 CFR Part 98 Subpart W.
3. Calculated using Equation W-36 from 40 CFR Part 98 Subpart W
4. Calculated by multiplying by GWP, 25 for methane and 298 for N₂O
5. Calculated using Equation W-40 from 40 CFR Part 98 Subpart W

Amine Unit (AMINE) Potential Emissions Calculations

Amine Unit Parameters		
Design Throughput =	65	MMscfd
Type of Amine =	MDEA	
Amine Recirculation Rate =	950.00	gpm
Inlet Pressure =	950.00	psig
Inlet Temperature =	120.00	F
Flash Tank Present =	Yes	
Flash Tank Temp =	181.00	F
Flash Tank Pressure =	60.00	psig
Flash Tank Control =	VCU	
Condenser Present =	Yes	
Condenser Temp =	120.000	F
Condenser Control =	VCU	
Combustion Control Efficiency =	99.0	%

Uncontrolled Emissions	Flash Tank		Regenerator		Total	
COMPONENT	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
VOCs	87.88	384.92	40.26	176.34	128.14	561.25
HAP's	17.78	77.89	39.13	171.40	56.92	249.29
Benzene	6.65	29.13	16.06	70.34	22.71	99.47
H2S	0.17	0.73	5.81	25.45	5.98	26.18

Controlled Emissions	Flash Tank		Regenerator		Total	
COMPONENT	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
VOCs	0.88	3.85	0.40	1.76	1.28	5.61
HAP's	0.18	0.78	0.39	1.71	0.57	2.49
Benzene	0.07	0.29	0.16	0.70	0.23	0.99
H2S	0.00	0.01	0.06	0.25	0.06	0.26

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Cavalry Compressor Station
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Amine Unit (AMINE) Potential Emissions Calculations - Regenerator

Source Description	Uncontrolled Regenerator Overheads		Post-Condenser		Post-VCU		Overall Control Efficiency
Promax Stream	CondFeed		To TO		N/A		N/A
Component	lb / hr	ton / year	lb / hr	ton / year	lb / hr	ton / year	%
Water	23462.92	102767.60	1372.15	6010.01	1372.15	6010.01	94.15%
Hydrogen Sulfide	5.81	25.45	5.79	25.36	0.06	0.25	99.00%
Nitrogen	0.01	0.05	0.01	0.05	0.01	0.05	0.00%
Carbon Dioxide	35689.03	156317.97	35640.21	156104.11	35640.21	156104.11	0.14%
Methane	2.70	11.81	2.70	11.81	0.03	0.12	99.00%
Ethane	1.52	6.66	1.52	6.66	0.02	0.07	99.00%
Propane	0.68	2.98	0.68	2.98	0.01	0.03	99.00%
Isobutane	0.06	0.25	0.06	0.25	0.00	0.00	99.00%
n-Butane	0.27	1.19	0.27	1.19	0.00	0.01	99.00%
2,2-Dimethylpropane	0.00	0.00	0.00	0.00	0.00	0.00	99.00%
Isopentane	0.01	0.03	0.01	0.03	0.00	0.00	99.00%
n-Pentane	0.02	0.08	0.02	0.08	0.00	0.00	99.00%
2,2-Dimethylbutane	0.00	0.00	0.00	0.00	0.00	0.00	99.00%
Cyclopentane	0.00	0.00	0.00	0.00	0.00	0.00	
2,3-Dimethylbutane	0.00	0.00	0.00	0.00	0.00	0.00	99.00%
2-Methylpentane	0.00	0.01	0.00	0.01	0.00	0.00	99.00%
3-Methylpentane	0.00	0.01	0.00	0.01	0.00	0.00	99.00%
Methylcyclopentane	0.01	0.05	0.01	0.05	0.00	0.00	99.00%
Cyclohexane	0.07	0.29	0.07	0.29	0.00	0.00	99.00%
2-Methylhexane	0.00	0.00	0.00	0.00	0.00	0.00	99.00%
3-Methylhexane	0.00	0.00	0.00	0.00	0.00	0.00	99.00%
Methylcyclohexane	0.01	0.04	0.01	0.04	0.00	0.00	99.00%
Heptane	0.00	0.00	0.00	0.00	0.00	0.00	99.00%
Octane	0.00	0.00	0.00	0.00	0.00	0.00	99.00%
Nonane	0.00	0.00	0.00	0.00	0.00	0.00	99.00%
Decane +	0.00	0.00	0.00	0.00	0.00	0.00	
Undecane	0.00	0.00	0.00	0.00	0.00	0.00	
Benzene	16.06	70.34	16.02	70.16	0.16	0.70	99.00%
Toluene	9.77	42.77	9.75	42.69	0.10	0.43	99.00%
Ethylbenzene	9.43	41.30	9.41	41.23	0.09	0.41	99.00%
m-Xylene	1.60	7.03	1.60	7.01	0.02	0.07	99.00%
p-Xylene	1.63	7.15	1.63	7.13	0.02	0.07	99.00%
o-Xylene	0.64	2.79	0.64	2.78	0.01	0.03	99.00%
n-Hexane	0.00	0.01	0.00	0.01	0.00	0.00	99.00%
2,2,4-Trimethylpentane	0.00	0.00	0.00	0.00	0.00	0.00	99.00%
Total	59202.25	259305.87	37062.55	162333.96	37012.87	162116.37	37.48%
Total VOC	40.26	176.34	40.17	175.96	0.40	1.76	99.00%
Total HAP	39.13	171.40	39.05	171.02	0.39	1.71	99.00%

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Amine Unit (AMINE) Potential Emissions Calculations - Flash Tank

Source Description	Uncontrolled Flash Tank		Post-VCU		Overall Control Efficiency
Promax Stream	Flash Gas		N/A		N/A
Component	lb / hr	ton / year	lb / hr	ton / year	%
Water	176.45	772.86	176.45	772.86	0.00%
Hydrogen Sulfide	0.17	0.73	0.00	0.01	99.00%
Nitrogen	12.90	56.52	12.90	56.52	0.00%
Carbon Dioxide	3288.21	14402.35	3288.21	14402.35	0.00%
Methane	293.67	1286.26	2.94	12.86	99.00%
Ethane	78.74	344.87	0.79	3.45	99.00%
Propane	44.05	192.94	0.44	1.93	99.00%
Isobutane	4.68	20.48	0.05	0.20	99.00%
n-Butane	14.75	64.61	0.15	0.65	99.00%
2,2-Dimethylpropane	0.05	0.22	0.00	0.00	99.00%
Isopentane	1.67	7.31	0.02	0.07	99.00%
n-Pentane	2.31	10.11	0.02	0.10	99.00%
2,2-Dimethylbutane	0.02	0.07	0.00	0.00	99.00%
Cyclopentane	0.00	0.00	0.00	0.00	
2,3-Dimethylbutane	0.15	0.64	0.00	0.01	99.00%
2-Methylpentane	0.41	1.82	0.00	0.02	99.00%
3-Methylpentane	0.26	1.15	0.00	0.01	99.00%
Methylcyclopentane	0.45	1.98	0.00	0.02	99.00%
Cyclohexane	0.76	3.33	0.01	0.03	99.00%
2-Methylhexane	0.03	0.13	0.00	0.00	99.00%
3-Methylhexane	0.04	0.16	0.00	0.00	99.00%
Methylcyclohexane	0.30	1.32	0.00	0.01	99.00%
Heptane	0.05	0.22	0.00	0.00	99.00%
Octane	0.10	0.45	0.00	0.00	99.00%
Nonane	0.01	0.06	0.00	0.00	99.00%
Decane +	0.00	0.00	0.00	0.00	
Undecane	0.00	0.01	0.00	0.00	99.00%
Benzene	6.65	29.13	0.07	0.29	99.00%
Toluene	3.92	17.18	0.04	0.17	99.00%
Ethylbenzene	5.08	22.27	0.05	0.22	99.00%
m-Xylene	0.68	2.96	0.01	0.03	99.00%
p-Xylene	0.69	3.01	0.01	0.03	99.00%
o-Xylene	0.27	1.17	0.00	0.01	99.00%
n-Hexane	0.47	2.04	0.00	0.02	99.00%
2,2,4-Trimethylpentane	0.03	0.14	0.00	0.00	99.00%
Total	3938.02	17248.51	3482.17	15251.90	11.58%
Total VOC	87.88	384.92	0.88	3.85	99.00%
Total HAP	17.78	77.89	0.18	0.78	99.00%

Dehydration Unit (DEHY1) Potential Emissions Calculations

Dehy Unit Parameters		
Design Throughput =	65	MMscfd
Type of Glycol =	TEG	
Glycol Recirculation Rate =	20.00	gpm
Inlet Pressure =	939.00	psig
Inlet Temperature =	119.81	F
Flash Tank Present =	Yes	
Flash Tank Temp =	130.00	F
Flash Tank Pressure =	60.00	psig
Flash Tank Control =	VCU	
Condenser Present =	Yes	
Condenser Temp =	120.000	F
Condenser Control =	VCU	
Combustion Control Efficiency =	99.0	%

Uncontrolled Emissions	Flash Tank		Regenerator		Total	
COMPONENT	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
VOCs	37.81	165.60	159.95	700.60	197.76	866.20
HAP's	1.73	7.58	97.13	425.41	98.86	432.99
Benzene	0.28	1.21	17.11	74.93	17.38	76.14
H2S	0.00	0.00	0.00	0.00	0.00	0.00

Controlled Emissions	Flash Tank		Regenerator		Total	
COMPONENT	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
VOCs	0.38	1.66	0.38	1.68	0.76	3.34
HAP's	0.02	0.08	0.08	0.37	0.10	0.44
Benzene	0.00	0.01	0.04	0.17	0.04	0.18
H2S	0.00	0.00	0.00	0.00	0.00	0.00

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Dehydration Unit (DEHY1) Potential Emissions Calculations - Regenerator

Source Description	Uncontrolled Regenerator Overheads		Post-Condenser		Post-VCU		Overall Control Efficiency
Promax Stream	20		5		N/A		N/A
Component	lb/ hr	ton/ year	lb/ hr	ton/ year	lb/ hr	ton/ year	%
Water	248.17	1086.97	2.29	10.01	2.29	10.01	99.08%
Hydrogen Sulfide	0.00	0.00	0.00	0.00	0.00	0.00	99.05%
Nitrogen	0.01	0.05	0.01	0.05	0.01	0.05	0.11%
Carbon Dioxide	0.00	0.00	0.00	0.00	0.00	0.00	1.50%
Methane	1.85	8.10	1.84	8.07	0.02	0.08	99.00%
Ethane	4.10	17.94	4.01	17.58	0.04	0.18	99.02%
Propane	8.68	38.02	8.20	35.92	0.08	0.36	99.06%
Isobutane	1.79	7.86	1.59	6.96	0.02	0.07	99.11%
n-Butane	8.13	35.61	6.83	29.92	0.07	0.30	99.16%
2,2-Dimethylpropane	0.05	0.22	0.04	0.18	0.00	0.00	99.19%
Isopentane	4.15	18.18	2.86	12.53	0.03	0.13	99.31%
n-Pentane	5.42	23.73	3.43	15.04	0.03	0.15	99.37%
2,2-Dimethylbutane	0.05	0.24	0.03	0.12	0.00	0.00	99.48%
Cyclopentane	0.00	0.00	0.00	0.00	0.00	0.00	
2,3-Dimethylbutane	0.74	3.24	0.33	1.43	0.00	0.01	99.56%
2-Methylpentane	1.88	8.22	0.81	3.57	0.01	0.04	99.57%
3-Methylpentane	1.54	6.73	0.61	2.69	0.01	0.03	99.60%
Methylcyclopentane	9.92	43.47	3.18	13.92	0.03	0.14	99.68%
Cyclohexane	2.90	12.69	0.75	3.27	0.01	0.03	99.74%
2-Methylhexane	0.52	2.27	0.12	0.52	0.00	0.01	99.77%
3-Methylhexane	0.84	3.68	0.17	0.77	0.00	0.01	99.79%
Methylcyclohexane	3.22	14.09	0.50	2.19	0.01	0.02	99.84%
Heptane	1.25	5.46	0.21	0.94	0.00	0.01	99.83%
Octane	3.51	15.35	0.23	1.02	0.00	0.01	99.93%
Nonane	1.81	7.92	0.05	0.23	0.00	0.00	99.97%
Decane +	0.00	0.00	0.00	0.00	0.00	0.00	
Undecane	6.44	28.21	0.03	0.15	0.00	0.00	99.99%
Benzene	17.11	74.93	3.79	16.59	0.04	0.17	99.78%
Toluene	18.81	82.39	1.99	8.73	0.02	0.09	99.89%
Ethylbenzene	45.83	200.74	1.69	7.40	0.02	0.07	99.96%
m-Xylene	5.66	24.79	0.21	0.91	0.00	0.01	99.96%
p-Xylene	5.35	23.42	0.20	0.88	0.00	0.01	99.96%
o-Xylene	2.88	12.62	0.10	0.43	0.00	0.00	99.97%
n-Hexane	1.04	4.53	0.37	1.61	0.00	0.02	99.64%
2,2,4-Trimethylpentane	0.45	1.98	0.08	0.36	0.00	0.00	99.82%
Total	414.08	1813.67	46.57	203.98	2.74	12.01	99.34%
Total VOC	159.95	700.60	38.42	168.26	0.38	1.68	99.76%
Total HAP	97.13	425.41	8.42	36.90	0.08	0.37	99.91%

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Dehydration Unit (DEHY1) Potential Emissions Calculations - Flash Tank

Source Description	Uncontrolled Flash Tank		Post-VCU		Overall Control Efficiency
Promax Stream	Flash Gas		N/A		N/A
Component	lb / hr	ton / year	lb / hr	ton / year	%
Water	0.27	1.18	0.27	1.18	0.00%
Hydrogen Sulfide	0.00	0.00	0.00	0.00	99.00%
Nitrogen	1.39	6.07	1.39	6.07	0.00%
Carbon Dioxide	0.00	0.00	0.00	0.00	0.00%
Methane	32.38	141.82	0.32	1.42	99.00%
Ethane	16.94	74.21	0.17	0.74	99.00%
Propane	17.64	77.27	0.18	0.77	99.00%
Isobutane	2.61	11.42	0.03	0.11	99.00%
n-Butane	7.86	34.42	0.08	0.34	99.00%
2,2-Dimethylpropane	0.06	0.26	0.00	0.00	99.00%
Isopentane	2.48	10.86	0.02	0.11	99.00%
n-Pentane	2.68	11.73	0.03	0.12	99.00%
2,2-Dimethylbutane	0.02	0.09	0.00	0.00	99.00%
Cyclopentane	0.00	0.00	0.00	0.00	
2,3-Dimethylbutane	0.22	0.95	0.00	0.01	99.00%
2-Methylpentane	0.60	2.63	0.01	0.03	99.00%
3-Methylpentane	0.40	1.75	0.00	0.02	99.00%
Methylcyclopentane	0.25	1.11	0.00	0.01	99.00%
Cyclohexane	0.24	1.04	0.00	0.01	99.00%
2-Methylhexane	0.09	0.42	0.00	0.00	99.00%
3-Methylhexane	0.12	0.54	0.00	0.01	99.00%
Methylcyclohexane	0.21	0.93	0.00	0.01	99.00%
Heptane	0.17	0.73	0.00	0.01	99.00%
Octane	0.27	1.17	0.00	0.01	99.00%
Nonane	0.08	0.33	0.00	0.00	99.00%
Decane +	0.00	0.00	0.00	0.00	
Undecane	0.08	0.37	0.00	0.00	99.00%
Benzene	0.28	1.21	0.00	0.01	99.00%
Toluene	0.16	0.72	0.00	0.01	99.00%
Ethylbenzene	0.24	1.07	0.00	0.01	99.00%
m-Xylene	0.03	0.13	0.00	0.00	99.00%
p-Xylene	0.03	0.13	0.00	0.00	99.00%
o-Xylene	0.01	0.05	0.00	0.00	99.00%
n-Hexane	0.91	3.99	0.01	0.04	99.00%
2,2,4-Trimethylpentane	0.06	0.28	0.00	0.00	99.00%
Total	88.79	388.88	2.53	11.07	97.15%
Total VOC	37.81	165.60	0.38	1.66	99.00%
Total HAP	1.73	7.58	0.02	0.08	99.00%

TOTAL EMISSIONS SUMMARY

Storage Tank VOC Emissions															
FIN	Unit Description	Control Type	Capacity (bbl)	Material Throughput (bbls/day)	Material Type (Oil/Produced Water)	Uncontrolled Working & Breathing Emissions		Uncontrolled Flash Emissions		Total Uncontrolled		Uncombusted Emissions (Assume 98% Dest. Eff)		Total Post controls VOC Emissions	
						lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
1 TK-1	Oil Storage Tank	VRU & Flare	300	10	OIL	0.45	1.98	0.04	0.16	0.49	2.14	0.01	0.04	0.01	0.04
2 TK-2	Oil Storage Tank	VRU & Flare	300	10	OIL	0.45	1.98	0.04	0.16	0.49	2.14	0.01	0.04	0.01	0.04
3 TK-3	Oil Storage Tank	VRU & Flare	300	10	OIL	0.45	1.98	0.04	0.16	0.49	2.14	0.01	0.04	0.01	0.04
1 PWTk-1	Water Storage Tank	Flare	300	50	Produced Water	0.04	0.17	0.00	0.01	0.04	0.18	0.00	0.00	0.001	0.004
GB-1	Gunbarrel	VRU & Flare	400	80	Oil/Water Mix	-	-	11.54	50.55	11.54	50.55	0.23	1.01	0.23	1.01
Storage Tank Emissions										13.05	57.15	0.26	1.14	0.26	1.143

TOTAL EMISSIONS SUMMARY

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TOTAL EMISSIONS SUMMARY

Storage Tank VOC Emissions															
FIN	Unit Description	Control Type	Capacity (bbl)	Material Throughput (bbls/day)	Material Type (Oil/Produced Water)	Uncontrolled Working & Breathing Methane Emissions		Uncontrolled Methane Flash Emissions		Total Uncontrolled Methane		Uncombusted Emissions (Assume 98% Dest. Eff)		Total Post controls Methane Emissions	
						lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
1 TK-1	Oil Storage Tank	VRU & Flare	300	10	OIL	0.01	0.05	0.00	0.02	0.02	0.07	0.00	0.00	0.00	0.00
2 TK-2	Oil Storage Tank	VRU & Flare	300	10	OIL	0.01	0.05	0.00	0.02	0.02	0.07	0.00	0.00	0.00	0.00
3 TK-3	Oil Storage Tank	VRU & Flare	300	10	OIL	0.01	0.05	0.00	0.02	0.02	0.07	0.00	0.00	0.00	0.00
1 PWTk-1	Water Storage Tank	Flare	300	50	Produced Water	0.00	0.01	0.00	0.00	0.00	0.02	0.00	0.00	0.000	0.000
GB-1	Gunbarrel	VRU & Flare	400	80	Oil/Water Mix	-	-	1.95	8.52	1.95	8.52	0.04	0.17	0.04	0.17
Storage Tank Emissions										2.00	8.74	0.04	0.17	0.04	0.175

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(TL-O) Truck Loading Losses Calculations - VOCs

Promax Stream Name = Oil TL Vapor

Oil Production Trucked:	30	bbls / Day
Oil Production Trucked:	1,105	bbls / Year
Oil Production Trucked:	46,423	gal / Year

$$LL = 12.46 * SPM/T * (1 - EFF/100)$$

Saturation Factor (S) =	0.6	
Max True Vapor Pressure of Liquid Loaded (P) =	8.89	psi
Max Temperature of Bulk Liquid Loaded (T) =	535.45	R
Molecular Weight (M) ¹ =	53.69	lb/lb mol
Control Efficiency * Collection Efficiency (EEF) ³ =	0.00	%
Total Hydrocarbon Content of Vapor (wt %) =	99.23	%
VOC Content of Vapor (wt %) ¹ =	93.68	%
HAP Content of Vapor (wt %) ¹ =	5.156	%
H2S Content of Vapor (wt %) ¹ =	0.006	%
Benzene Content of Vapor (wt %) ¹ =	0.849	%
Average Uncontrolled (LL) ² =	0.2848	lb THC/ bbl
Average Controlled (LL) ² =	0.2848	lb THC/ bbl
Average Controlled (LL) =	0.2668	lb VOC/ bbl
Max Uncontrolled (LL) ² =	0.2799	lb THC/ bbl
Max Controlled (LL) ² =	0.2799	lb THC/ bbl
Max Controlled (LL) =	0.2622	lb VOC/ bbl
Estimated Throughput =	1,105	bbls/year
Truck Loading Rate =	210	bbls/hr
Estimated # of Loads =	5	1 hr/ Load

Uncollected Emissions at Truck Loading

COMPONENT	lb/hr	TPY
VOCs	55.06	0.15
HAP's	3.03	0.01
Benzene	0.50	0.00
H2S	0.00	0.00

Uncontrolled Emissions at Truck Loading

COMPONENT	lb/hr	TPY
VOCs	55.06	0.15
HAP's	3.03	0.01
Benzene	0.50	0.00
H2S	0.00	0.00

**Kaiser-Francis Oil
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(TL-O) Truck Loading Losses Calculations - VOCs

Component	Total Speciated Vapors Emitted During Loading			Speciated Vapor Collected sent to LPF		Speciated Vapor Uncollected During Loading	
	Mass Fraction	lb / hr	ton / year	lb / hr	ton / year	lb / hr	ton / year
TEG	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water	0.77	0.45	0.00	0.00	0.00	0.45	0.00
Hydrogen Sulfide	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Nitrogen	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Carbon Dioxide	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Methane	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ethane	5.55	3.26	0.01	0.00	0.00	3.26	0.01
Propane	31.09	18.27	0.05	0.00	0.00	18.27	0.05
Isobutane	7.94	4.67	0.01	0.00	0.00	4.67	0.01
n-Butane	22.81	13.40	0.04	0.00	0.00	13.40	0.04
2,2-Dimethylpropane	0.22	0.13	0.00	0.00	0.00	0.13	0.00
Isopentane	8.69	5.11	0.01	0.00	0.00	5.11	0.01
n-Pentane	8.89	5.23	0.01	0.00	0.00	5.23	0.01
2,2-Dimethylbutane	0.08	0.05	0.00	0.00	0.00	0.05	0.00
Cyclopentane	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,3-Dimethylbutane	0.73	0.43	0.00	0.00	0.00	0.43	0.00
2-Methylpentane	2.11	1.24	0.00	0.00	0.00	1.24	0.00
3-Methylpentane	1.34	0.79	0.00	0.00	0.00	0.79	0.00
Methylcyclopentane	0.91	0.53	0.00	0.00	0.00	0.53	0.00
Cyclohexane	0.68	0.40	0.00	0.00	0.00	0.40	0.00
2-Methylhexane	0.33	0.20	0.00	0.00	0.00	0.20	0.00
3-Methylhexane	0.41	0.24	0.00	0.00	0.00	0.24	0.00
Methylcyclohexane	0.65	0.38	0.00	0.00	0.00	0.38	0.00
Heptane	0.56	0.33	0.00	0.00	0.00	0.33	0.00
Octane	0.86	0.51	0.00	0.00	0.00	0.51	0.00
Nonane	0.20	0.12	0.00	0.00	0.00	0.12	0.00
Decane +	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Benzene	0.85	0.50	0.00	0.00	0.00	0.50	0.00
Toluene	0.57	0.34	0.00	0.00	0.00	0.34	0.00
Ethylbenzene	0.84	0.49	0.00	0.00	0.00	0.49	0.00
m-Xylene	0.11	0.06	0.00	0.00	0.00	0.06	0.00
o-Xylene	0.14	0.08	0.00	0.00	0.00	0.08	0.00
n-Hexane	2.42	1.42	0.00	0.00	0.00	1.42	0.00
2,2,4-Trimethylpentane	0.23	0.13	0.00	0.00	0.00	0.13	0.00
Total	100.00	58.78	0.16	0.00	0.00	58.78	0.16
Total VOC	93.68	55.06	0.15	0.00	0.00	55.06	0.15
Total HAP	5.16	3.03	0.01	0.00	0.00	3.03	0.01

¹ Molecular Weight and VOC/HAP weight percent were obtained from Promax.

² Loading emissions include total hydrocarbons as calculated using AP-42, Section 5.2.

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(TL-W) Truck Loading Losses Calculations - VOCs

Promax Stream Name = Water TL Vapor

Water Production Trucked:	50	bbls / Day
Water Production Trucked:	18,250	bbls / Year
Water Production Trucked:	766,500	gal / Year

$$LL = 12.46 * SPM/T * (1-EEF/100)$$

Saturation Factor (S) =	0.6	
Max True Vapor Pressure of Liquid Loaded (P) =	1.05	psi
Max Temperature of Bulk Liquid Loaded (T) =	535.45	R
Molecular Weight (M) ¹ =	28.03	lb/lb mol
Control Efficiency * Collection Efficiency (EEF) ³ =	0.00	%
Total Hydrocarbon Content of Vapor (wt %) =	44.62	%
VOC Content of Vapor (wt %) ¹ =	44.50	%
HAP Content of Vapor (wt %) ¹ =	44.505	%
H2S Content of Vapor (wt %) ¹ =	0.114	%
Benzene Content of Vapor (wt %) ¹ =	16.932	%
Average Uncontrolled (LL) ² =	0.018	lb THC/ bbl
Average Controlled (LL) ² =	0.0176	lb THC/ bbl
Average Controlled (LL) =	0.0078	lb VOC/ bbl
Max Uncontrolled (LL) ² =	0.0173	lb THC/ bbl
Max Controlled (LL) ² =	0.0173	lb THC/ bbl
Max Controlled (LL) =	0.0077	lb VOC/ bbl
Estimated Throughput =	18,250	bbls/year
Truck Loading Rate =	210	bbls/hr
Estimated # of Loads =	87	1 hr/ Load

Uncollected Emissions at Truck Loading

COMPONENT	lb/hr	TPY
VOCs	1.62	0.07
HAP's	1.62	0.07
Benzene	0.62	0.03
H2S	0.00	0.00

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(TL-W) Truck Loading Losses Calculations - VOCs

Component	Total Speciated Vapors Emitted During Loading		
	Mass Fraction	lb / hr	ton / year
TEG	0.00	0.00	0.00
Water	55.38	2.02	0.09
Hydrogen Sulfide	0.11	0.00	0.00
Nitrogen	0.00	0.00	0.00
Carbon Dioxide	0.00	0.00	0.00
Methane	0.00	0.00	0.00
Ethane	0.00	0.00	0.00
Propane	0.00	0.00	0.00
Isobutane	0.00	0.00	0.00
n-Butane	0.00	0.00	0.00
2,2-Dimethylpropane	0.00	0.00	0.00
Isopentane	0.00	0.00	0.00
n-Pentane	0.00	0.00	0.00
2,2-Dimethylbutane	0.00	0.00	0.00
Cyclopentane	0.00	0.00	0.00
2,3-Dimethylbutane	0.00	0.00	0.00
2-Methylpentane	0.00	0.00	0.00
3-Methylpentane	0.00	0.00	0.00
Methylcyclopentane	0.00	0.00	0.00
Cyclohexane	0.00	0.00	0.00
2-Methylhexane	0.00	0.00	0.00
3-Methylhexane	0.00	0.00	0.00
Methylcyclohexane	0.00	0.00	0.00
Heptane	0.00	0.00	0.00
Octane	0.00	0.00	0.00
Nonane	0.00	0.00	0.00
Decane +	0.00	0.00	0.00
Benzene	16.93	0.62	0.03
Toluene	9.94	0.36	0.02
Ethylbenzene	13.75	0.50	0.02
m-Xylene	0.99	0.04	0.00
o-Xylene	2.90	0.11	0.00
n-Hexane	0.00	0.00	0.00
2,2,4-Trimethylpentane	0.00	0.00	0.00
Total	100.00	3.64	0.16
Total VOC	44.50	1.62	0.07
Total HAP	44.50	1.62	0.07

¹ Molecular Weight and VOC/HAP weight percent were obtained from Promax.

² Loading emissions include total hydrocarbons as calculated using AP-42, Section 5.2.

Haul Roads - PM Emissions

Average Volume per Hauling ¹	200	bbls
Oil Haulings	6	haulings/yr
Water Haulings	91	haulings/yr

E = k (s/12) ^a (W/3) ^b		E _{ext} = E [(365 - P)/365]		
Silt Content (s) (%) ² =	4.8			
Mean Vehicle Weight (W) (tons) ³ =	20			
Rain Days Per Year (P) ⁴ =	70			
Length of Haul Road (miles) ⁵ =	0.1			
Haul Road trips per hour =	1			
Vehicle Miles Traveled (VMT)(miles/yr) =	10			
Vehicle Miles Traveled (VMT)(miles/hr) =	0.001			
Particle Size Specific Factors	PM 2.5	PM 10	TSP	
Constant (k) =	0.15	1.5	4.9	
Constant (a) =	0.9	0.9	0.7	
Constant (b) =	0.45	0.45	0.45	
E (lb/VMT) ^{6,7} =	0.15	1.54	6.06	
E _{ext} (lb/VMT) ⁸ =	0.12	1.24	4.90	
TOTALS				
Lb/hr =	0.02	0.15	0.61	
TPY =	0.001	0.01	0.02	

Footnotes:

- (1) Oil and water haulings based on average loading of 200 bbls/hauling
- (2) Silt content based on NMED guidance and AP-42 Table 13.2.2-1 (Nov. 2006)
- (3) Mean vehicle weight is based on maximum possible vehicle weight.
- (4) Rain days value is the default allowed by NMED without additional justification.
- (5) Miles per hauling is based on mileage of truck(s) to and from primary lease road.
- (6) Hourly emission factors are calculated using AP-42 Section 13.2.2 Equation 1a (Nov. 2006).
- (7) Maximum hourly emission calculations incorporate one water and one oil loading during an hour.
- (8) Annual emission factors are extrapolated from hourly factors per AP-42 Section 13.2.2 Equation 2 (Nov. 2006).

FUGITIVE EMISSIONS CALCULATIONS

Operating Hours:	8760 hours/year
Emission Factor Source	Standard EFs - EPA-453/R-95-017 Table 2-4
Control Efficiency Source:	None
Emission Buffer (%):	0

Service	Component Type	Count	Emission Factor (lb/hr-source) ^a		Control (%) ^b	Pollutant	Mass Fraction ^c	Uncontrolled Emissions (lb/hr)	Uncontrolled Emissions (tpy)	Controlled Emissions (lb/hr)	Controlled Emissions (tpy)
			Table 2-4	Table 2-8							
Gas	Valves	245	9.92E-03	5.51E-05	0%	VOC	0.1467	0.6216	2.7228	0.6216	2.7228
	Pump Seals	0	5.29E-03	7.72E-04	0%	H2S	0.000	0.0002	0.0007	0.0002	0.0007
	Connectors	735	4.41E-04	2.20E-05	0%	Benzene	0.001	0.0032	0.0138	0.0032	0.0138
	Flanges	295	8.60E-04	1.26E-05	0%	Toluene	0.001	0.0022	0.0096	0.0022	0.0096
	Open-Ended Lines	37	4.41E-03	3.31E-05	0%	E-Benzene	0.001	0.0037	0.0162	0.0037	0.0162
	Other	0	1.94E-02	2.65E-04	0%	Xylenes	0.000	0.0006	0.0028	0.0006	0.0028
	Relief Valves	55	1.94E-02	2.65E-04	0%	n-Hexane	0.002	0.0101	0.0444	0.0101	0.0444
						2,2,4 Trimethylpentane	0.000	0.0011	0.0046	0.0011	0.0046
Heavy Oil	Valves	0	1.85E-05	1.85E-05	0%	VOC	0.9997	0.0000	0.0000	0.0000	0.0000
	Pump Seals	0	0.00E+00	0.00E+00	0%	H2S	0.000	0.0000	0.0000	0.0000	0.0000
	Connectors	0	1.65E-05	1.65E-05	0%	Benzene	0.010	0.0000	0.0000	0.0000	0.0000
	Flanges	0	8.60E-06	8.60E-07	0%	Toluene	0.023	0.0000	0.0000	0.0000	0.0000
	Open-Ended Lines	0	3.09E-04	1.59E-05	0%	E-Benzene	0.119	0.0000	0.0000	0.0000	0.0000
	Other	0	3.09E-04	7.05E-05	0%	Xylenes	0.042	0.0000	0.0000	0.0000	0.0000
	Relief Valves	0	3.09E-04	7.05E-05	0%	n-Hexane	0.025	0.0000	0.0000	0.0000	0.0000
						2,2,4 Trimethylpentane	0.007	0.0000	0.0000	0.0000	0.0000
Light Oil	Valves	100	5.51E-03	4.19E-05	0%	VOC	0.9997	0.9660	4.2309	0.9660	4.2309
	Pump Seals	2.5	2.87E-02	1.12E-03	0%	H2S	0.000	0.0000	0.0000	0.0000	0.0000
	Connectors	300	4.63E-04	2.14E-05	0%	Benzene	0.010	0.0096	0.0420	0.0096	0.0420
	Flanges	110	2.43E-04	5.29E-06	0%	Toluene	0.023	0.0223	0.0978	0.0223	0.0978
	Open-Ended Lines	39	2.87E-03	3.09E-05	0%	E-Benzene	0.119	0.1146	0.5019	0.1146	0.5019
	Other	4	1.65E-02	2.43E-04	0%	Xylenes	0.042	0.0408	0.1785	0.0408	0.1785
	Relief Valves	0	1.65E-02	2.43E-04	0%	n-Hexane	0.025	0.0245	0.1074	0.0245	0.1074
						2,2,4 Trimethylpentane	0.007	0.0071	0.0310	0.0071	0.0310
Water/Oil	Valves	46	2.16E-04	2.14E-05	0%	VOC	0.010	0.0008	0.0037	0.0008	0.0037
	Pump Seals	1	5.29E-05	5.29E-05	0%	H2S	0.000	0.0000	0.0000	0.0000	0.0000
	Connectors	138	2.43E-04	2.20E-05	0%	Benzene	0.000	0.0000	0.0000	0.0000	0.0000
	Flanges	245	6.39E-06	6.39E-06	0%	Toluene	0.000	0.0000	0.0001	0.0000	0.0001
	Open-Ended Lines	16	5.51E-04	7.72E-06	0%	E-Benzene	0.001	0.0001	0.0004	0.0001	0.0004
	Other	1	3.09E-02	1.30E-04	0%	Xylenes	0.000	0.0000	0.0002	0.0000	0.0002
	Relief Valves	0	3.09E-02	1.30E-04	0%	n-Hexane	0.000	0.0000	0.0001	0.0000	0.0001
						2,2,4 Trimethylpentane	0.000	0.0000	0.0000	0.0000	0.0000

Fugitive Emission Summary

Pollutant	Uncontrolled Emissions		Controlled Emissions	
	(lb/hr)	(tpy)	(lb/hr)	(tpy)
VOC	1.59	6.96	1.59	6.96
HAPs	0.24	1.05	0.24	1.05
H2S	0.00	0.00	0.00	0.00
Benzene	0.01	0.06	0.01	0.06
Toluene	0.02	0.11	0.02	0.11
E-Benzene	0.12	0.52	0.12	0.52
Xylenes	0.04	0.18	0.04	0.18
n-Hexane	0.03	0.15	0.03	0.15
2,2,4 Trimethylpentane	0.01	0.04	0.01	0.04

Footnotes:

^a Factors are taken from EPA Document EPA-453/R-095-017, November 1995, Table 2-4

^c Gas/vapor based on inlet gas. Heavy Oil, Light Oil, and Water/Oil fugitives were based on liquid analysis of inlet separator hydrocarbon liquid.

FUGITIVE EMISSIONS CALCULATIONS - GHG

Operating Hours:	8760 hours/year
Emission Factor Source	Standard EFs - EPA-453/R-95-017 Table 2-4
Control Efficiency Source:	None
Emission Buffer (%):	0

Service	Component Type	Count	Emission Factor (lb/hr-source) ^a		Control (%) ^b	Pollutant	Mass Fraction ^c	Total Mass (tpy)	CO2e (tpy)
			Table 2-4	Table 2-8					
Gas	Valves	245	9.92E-03	5.51E-05	0%	CO ₂	0.2314	4.2955	4.2955
	Pump Seals	0	5.29E-03	7.72E-04	0%	CH ₄	0.458	8.5010	212.5238
	Connectors	735	4.41E-04	2.20E-05	0%				
	Flanges	295	8.60E-04	1.26E-05	0%				
	Open-Ended Lines	37	4.41E-03	3.31E-05	0%				
	Other	0	1.94E-02	2.65E-04	0%				
	Relief Valves	55	1.94E-02	2.65E-04	0%				
Light Oil	Valves	100	5.51E-03	4.19E-05	0%	CO ₂	0.0000	0.0000	0.0000
	Pump Seals	2.5	2.87E-02	1.12E-03	0%	CH ₄	0.000	0.0000	0.0000
	Connectors	300	4.63E-04	2.14E-05	0%				
	Flanges	110	2.43E-04	5.29E-06	0%				
	Open-Ended Lines	39	2.87E-03	3.09E-05	0%				
	Other	4	1.65E-02	2.43E-04	0%				
	Relief Valves	0	1.65E-02	2.43E-04	0%				
Water/Oil	Valves	46	2.16E-04	2.14E-05	0%	CO ₂	0.000	0.0000	0.0000
	Pump Seals	1	5.29E-05	5.29E-05	0%	CH ₄	0.000	0.0000	0.0000
	Connectors	138	2.43E-04	2.20E-05	0%				
	Flanges	245	6.39E-06	6.39E-06	0%				
	Open-Ended Lines	16	5.51E-04	7.72E-06	0%				
	Other	1	3.09E-02	1.30E-04	0%				
	Relief Valves	0	3.09E-02	1.30E-04	0%				

Fugitive Emission Summary

Pollutant	Total Mass	CO2e
	(tpy)	(tpy)
CO2	4.30	4.30
CH4	8.50	212.52

Footnotes:

^a Factors are taken from EPA Document EPA-453/R-095-017, November 1995, Table 2-4

^c Gas/vapor based on inlet gas. Heavy Oil, Light Oil, and Water/Oil fugitives were based on liquid analysis of inlet separator hydrocarbon liquid.

Kaiser-Francis Oil Company
Cavalry Compressor Station
9530M2

Maintenance, Startup, and Shutdown Calculations - Blowdown

Engine ID ENG1; ENG2; ENG3; ENG4; ENG5;
Duration per Blowdown (min) 6
Number of Compressors: 5
Maximum Blowdowns per hour: 5
Blowdown Vented to: Atmosphere
Total Volume of Compressor(s): 12788.60 SCF
of Events per year: 100
Total Expected Volume 1,278,860.00 SCF
 1278.86 MCF

379.5 scf / lb mol constant at 60 F and 14.7 PSI

Component	Mol Wt	Wt %	Mol %	MCF/event	ft ³ /lb	(lb/hr)	(tpy)
H2S	34.081	0.004	0.002	0.000	11.14	0.03	0.00
VOC	52.776	14.667	6.586	0.842	7.19	117.13	5.86
n-Hexane	86.175	0.239	0.066	0.008	4.40	1.91	0.10
2,2,4 Trimethylpe	114.229	0.025	0.005	0.001	3.32	0.20	0.01
Benzene	78.112	0.075	0.023	0.003	4.86	0.60	0.03
Toluene	92.138	0.052	0.013	0.002	4.12	0.41	0.02
E-Benzene	86.175	0.239	0.066	0.008	4.40	1.91	0.10
Xylenes	106.165	0.028	0.006	0.001	3.57	0.22	0.01

Kaiser-Francis Oil Company
Cavalry Compressor Station
9530M2

Maintenance, Startup, and Shutdown Calculations

Operational Hours	8760	hrs
Volume of Pneumatic Controller:	0.05	ft ³
# of changes per year:	50	
Volume of Pressure Gauge:	0.27	ft ³
# of changes per year:	10	
Volume of Separators:	441.79	ft ³
Volume of Heaters:	530.14	ft ³
Volume of Vapor Towers:	0.00	ft ³
Volume of Compressors:	706.86	ft ³
Volume of Piping:	242.98	ft ³
Total Facility Degassing Volume:	1921.77	ft ³
Number of Degassing Events:	20.00	
Expected Total Volume	1922.09	SCF/Event
	1.92	MCF/Event
	38440.45	SCF
	38.44	MCF
	379.5	scf / lb mol ¹
Molecular Weight	23.70	lb / lb mol

Equipment:	Count
Separators	5
Heaters	3
VRT	0
Compressor	5

Component	Mol Wt	Wt %	Mol %	MCF/event	ft ³ /lb	(lb/hr)	(tpy)
H2S	34.081	0.004	0.002	0.000	11.14	0.00	0.00
VOC	52.776	14.667	6.586	0.127	7.19	17.60	0.18
n-Hexane	86.175	0.239	0.066	0.001	4.40	0.29	0.00
2,2,4 Trimethylpentane	114.229	0.025	0.005	0.000	3.32	0.03	0.00
Benzene	78.112	0.075	0.023	0.000	4.86	0.09	0.00
Toluene	92.138	0.052	0.013	0.000	4.12	0.06	0.00
E-Benzene	86.175	0.239	0.066	0.001	4.40	0.29	0.00
Xylenes	106.165	0.028	0.006	0.000	3.57	0.03	0.00
Carbon Dioxide	44.010	23.138	12.460	0.239	8.62	27.77	0.28
Methane	16.042	45.791	67.646	1.300	23.66	54.96	0.55

TOTALS					VOC	17.60	0.18
					HAP	0.79	0.01
					H2S	0.00	0.00

Footnotes:

¹ Constant @ 60F & 14.7 psi

Maintenance, Startup, and Shutdown Calculations - Pipeling Pigging

Blowdown Information		
Launcher Diameter	2.00	ft
Launcher Length	5	ft
Volume of the Vessel	15.71	ft ³
Estimated Volume of Gas in Vessel Under Pressure ¹	107	Standard ft ³
Vessel Pressure	100	psig
Vessel Pressure	114.70	psia
Vessel / Atmospheric Temperature	74	°F
Vessel / Atmospheric Temperature	534	°R

Gas Composition Information		
Atmospheric Pressure	14.7	Psia
Universal Gas Constant (R)	10.73	ft ³ psi/°R lb-mol
Molecular Weight	23.70	lb/lb-mole
Compressibility Factor	1.000	Z
VOC Weight Percent	14.67%	Percentage
HAP Weight Percent	0.51%	Percentage
Benzene Weight Percent	0.07%	Percentage
H2S Weight Percent	0.00%	Percentage
n-Hexane Weight Percent	0.24%	Percentage
Ending Gas Density (ρ_2) ²	0.0608	lb/ft ³
Starting Gas Density (ρ_1) ³	0.4744	lb/ft ³
Density (ρ_{TOTAL}) ⁴	0.4136	lb/ft ³

Emission Calculations		
Density (ρ_{TOTAL})	0.4136	lb/ft ³
Estimated Max Amount of Gas Vented ⁵	6.50	lbs/Event
Estimated Number of Equipment Blowdowns	12.00	Events/Year
Estimated Equipment Purge Count	1.00	Times/Event
Estimated Total Amount of Gas Released (Includes Methane & Ethane)	77.96	lbs/Year
Estimated Total Amount of Gas Released (Includes Methane & Ethane)	0.04	Tons/Year

Estimated Total Emissions		
Total VOC Emissions (Includes Total HAPs)	11.43	lbs/Year
	0.95	lbs/Event
	0.01	Tons/Year
Total HAPs Emissions	0.39	lbs/Year
	0.03	lbs/Event
	0.000	Tons/Year
H2S Emissions	0.00	lbs/Year
	0.00	lbs/Event
	0.000	Tons/Year
Benzene Emissions	0.06	lbs/Year
	0.00	lbs/Event
	0.000	Tons/Year
n-Hexane Emissions	0.19	lbs/Year
	4.79	lbs/Event
	0.000	Tons/Year

Calculation Methodology		
¹ Ideal Gas Law - Constant Temp: $(V_1 * P_1) / P_2$	² $\rho_1 = (P_1 * MW) / R * T_1 * Z$	³ $\rho_2 = (P_2 * MW) / R * T_2 * Z$
⁴ $\rho_{TOTAL} = \rho_1 - \rho_2$	⁵ Estimated Max Gas Vented (lb/Event) = $\rho_{TOTAL} * V_1$	

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 (CO₂), nitrous oxide (N₂O), methane (CH₄), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆).

Calculating GHG Emissions:

1. Calculate the ton per year (tpy) GHG mass emissions and GHG CO₂e 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 CO₂e 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 CO₂e 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 CO₂ 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)

EMISSIONS SUMMARY TABLE

EMISSION SOURCE DESCRIPTION	Unit Number	CO2		N2O		CH4		TOTAL	
		Total Mass (TPY)	Total CO2e (TPY)	Total Mass (TPY)	Total CO2e (TPY)	Total Mass (TPY)	Total CO2e (TPY)	Total Mass (TPY)	Total CO2e (TPY)
Caterpillar G3608 Natural Gas Compressor Engine	ENG1	10573.41	10573.41	0.02	4.92	86.26	2156.61	10,660	12,735
Caterpillar G3608 Natural Gas Compressor Engine	ENG2	10573.41	10573.41	0.02	4.92	86.26	2156.61	10,660	12,735
Caterpillar G3608 Natural Gas Compressor Engine	ENG3	10573.41	10573.41	0.02	4.92	86.26	2156.61	10,660	12,735
Caterpillar G3608 Natural Gas Compressor Engine	ENG4	10500.99	10500.99	0.02	4.92	86.26	2156.61	10,587	12,663
Caterpillar G3608 Natural Gas Compressor Engine	ENG5	10500.99	10500.99	0.02	4.92	86.26	2156.61	10,587	12,663
Single Tip Combustor: Total Emissions	COMB-1	295.20	295.20	0.00	0.14	0.25	6.26	295.447	301.59
Vapor Combustion Unit	VCU	201539.60	201539.60	0.06	16.73	55.73	1393.22	201595.39	202949.55
65 MMscfD Amine Unit	AMINE	--	--	--	--	12.98	324.52	12.98	324.52
65 MMscfD Glycol Dehydrator	DEHY	--	--	--	--	1.50	37.47	1.50	37.47
Oil Tanks: 300 bbl	TK-1 - TK-3	--	--	--	--	0.00	0.10	0.00	0.10
Water Tanks: 300 bbl	PWTK-1	--	--	--	--	0.00	0.01	0.00	0.01
Gun Barrel Vessel: 400 bbl	GB-1	--	--	--	--	0.17	4.26	0.17	4.26
1.25 MMBtu/hr Glycol Reboiler	RB-GLY	639.11	639.11	0.01	0.30	0.00	0.36	639.121	639.77
38.90 MMBtu/hr Amine Reboiler	RB-AM1	19889.03	19889.03	0.37	9.37	0.04	11.17	19889.44	19909.57
38.90 MMBtu/hr Amine Reboiler	RB-AM2	19889.03	19889.03	0.37	9.37	0.04	11.17	19889.44	19909.57
Oil Truck Loading (Uncaptured Vapors)	TL-O	0.00	0.00	--	--	0.00	0.00	0.00	0.00
Water Truck Loading (Uncaptured Vapors)	TL-W	0.00	0.00	--	--	0.00	0.00	0.00	0.00
Fugitives: Equipment Leaks	FUG	4.30	4.30	--	--	8.50	212.52	12.80	216.82
Haul Road	HR	--	--	--	--	--	--	0.00	0.00
Equipment: MSS	MSS	9.52	9.52	--	--	18.83	470.79	28.35	480.31

TOTAL FACILITY WIDE EMISSIONS	CO2		N2O		CH4		TOTAL	
	Total	CO2e	Total	CO2e	Total	CO2e	Total	CO2e
	294988.01	294988.01	0.90	60.54	529.36	13254.90	295518.27	308303.44

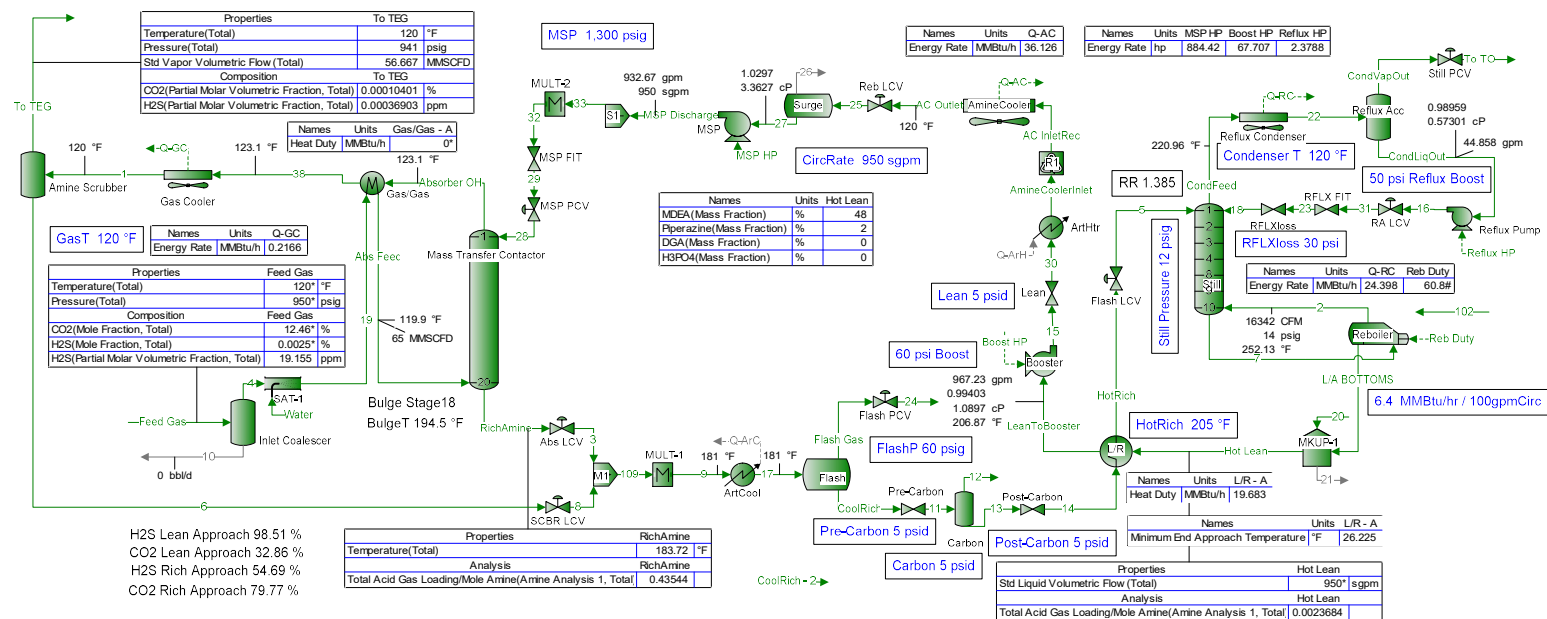
Section 7

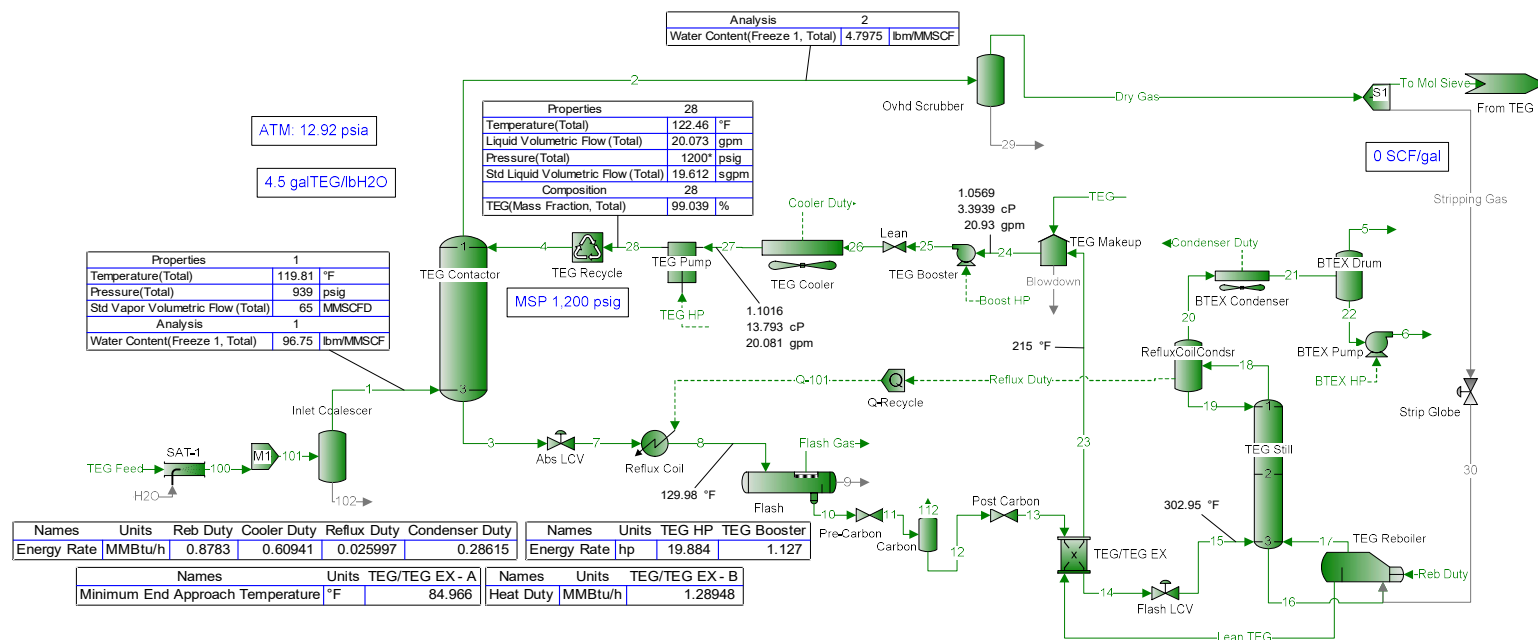
Information Used to Determine Emissions

Information Used to Determine Emissions shall include the following:

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

The gas analysis used for calculations in this application is based on the attached sample from North Bell Lake Unit 618H, however the wells that will supply this facility have not yet been drilled. CO₂ and H₂S content were altered to anticipated values, and the sample was re-normalized in Promax.





September 22, 2025

FESCO, Ltd.
1100 Fesco Ave. - Alice, Texas 78332

For: Kaiser - Francis Oil Company
P. O. Box 21468
Tulsa, Oklahoma 74121-1468

Sample: North Bell Lake Unit 618H
First Stage Separator
Spot Gas Sample @ 156 psig & 74 °F

Date Sampled: 09/11/2025

Job Number: 253093.001

CHROMATOGRAPH EXTENDED ANALYSIS - GPA 2286

COMPONENT	MOL%	GPM
Hydrogen Sulfide*	0.001	
Nitrogen	5.405	
Carbon Dioxide	14.855	
Methane	65.796	
Ethane	7.537	2.063
Propane	3.963	1.117
Isobutane	0.431	0.144
n-Butane	1.075	0.347
2-2 Dimethylpropane	0.008	0.003
Isopentane	0.281	0.105
n-Pentane	0.280	0.104
Hexanes	0.175	0.074
Heptanes Plus	<u>0.193</u>	<u>0.079</u>
Totals	100.000	4.036

Computed Real Characteristics Of Heptanes Plus:

Specific Gravity -----	3.338	(Air=1)
Molecular Weight -----	96.35	
Gross Heating Value -----	5129	BTU/CF

Computed Real Characteristics Of Total Sample:

Specific Gravity -----	0.840	(Air=1)
Compressibility (Z) -----	0.9965	
Molecular Weight -----	24.24	
Gross Heating Value		
Dry Basis -----	1013	BTU/CF
Saturated Basis -----	996	BTU/CF

*Hydrogen Sulfide tested on location by: Stain Tube Method (GPA 2377)
Results: 0.377 Gr/100 CF, 6.0 PPMV or 0.001 Mol %

Base Conditions: 15.025 PSI & 60 Deg F

Sampled By: (16) R. Elizondo
Analyst: LG
Processor: KV
Cylinder ID: T-1976

Certified: FESCO, Ltd. - Alice, Texas

Conan Pierce 361-661-7015

CHROMATOGRAPH EXTENDED ANALYSIS - GPA 2286
TOTAL REPORT

COMPONENT	MOL %	GPM	WT %
Hydrogen Sulfide*	0.001		0.001
Nitrogen	5.405		6.245
Carbon Dioxide	14.855		26.966
Methane	65.796		43.542
Ethane	7.537	2.063	9.348
Propane	3.963	1.117	7.208
Isobutane	0.431	0.144	1.033
n-Butane	1.075	0.347	2.577
2,2 Dimethylpropane	0.008	0.003	0.024
Isopentane	0.281	0.105	0.836
n-Pentane	0.280	0.104	0.833
2,2 Dimethylbutane	0.002	0.001	0.007
Cyclopentane	0.000	0.000	0.000
2,3 Dimethylbutane	0.019	0.008	0.068
2 Methylpentane	0.055	0.023	0.195
3 Methylpentane	0.035	0.015	0.124
n-Hexane	0.064	0.027	0.227
Methylcyclopentane	0.023	0.008	0.080
Benzene	0.022	0.006	0.071
Cyclohexane	0.018	0.006	0.062
2-Methylhexane	0.008	0.004	0.033
3-Methylhexane	0.010	0.005	0.041
2,2,4 Trimethylpentane	0.005	0.003	0.024
Other C7's	0.014	0.006	0.057
n-Heptane	0.016	0.008	0.066
Methylcyclohexane	0.013	0.005	0.053
Toluene	0.023	0.008	0.087
Other C8's	0.019	0.009	0.086
n-Octane	0.005	0.003	0.024
Ethylbenzene	0.003	0.001	0.013
M & P Xylenes	0.005	0.002	0.022
O-Xylene	0.001	0.000	0.004
Other C9's	0.005	0.003	0.026
n-Nonane	0.002	0.001	0.011
Other C10's	0.000	0.000	0.000
n-Decane	0.000	0.000	0.000
Undecanes (11)	<u>0.001</u>	<u>0.001</u>	<u>0.006</u>
Totals	100.000	4.036	100.000

Computed Real Characteristics of Total Sample

Specific Gravity ----- 0.840 (Air=1)
Compressibility (Z) ----- 0.9965
Molecular Weight ----- 24.24

Gross Heating Value

Dry Basis ----- 1013 BTU/CF
Saturated Basis ----- 996 BTU/CF

September 22, 2025

FESCO, Ltd.
1100 Fesco Ave. - Alice, Texas 78332

Sample: North Bell Lake Unit 618H
First Stage Separator
Spot Gas Sample @ 156 psig & 74 °F

Date Sampled: 09/11/2025

Job Number: 253093.001

GLYCALC FORMAT

COMPONENT	MOL%	GPM	Wt %
Carbon Dioxide	14.855		26.966
Hydrogen Sulfide	0.001		0.001
Nitrogen	5.405		6.245
Methane	65.796		43.542
Ethane	7.537	2.063	9.348
Propane	3.963	1.117	7.208
Isobutane	0.431	0.144	1.033
n-Butane	1.083	0.350	2.601
Isopentane	0.281	0.105	0.836
n-Pentane	0.280	0.104	0.833
Cyclopentane	0.000	0.000	0.000
n-Hexane	0.064	0.027	0.227
Cyclohexane	0.018	0.006	0.062
Other C6's	0.111	0.047	0.394
Heptanes	0.071	0.031	0.277
Methylcyclohexane	0.013	0.005	0.053
2,2,4 Trimethylpentane	0.005	0.003	0.024
Benzene	0.022	0.006	0.071
Toluene	0.023	0.008	0.087
Ethylbenzene	0.003	0.001	0.013
Xylenes	0.006	0.002	0.026
Octanes Plus	<u>0.032</u>	<u>0.016</u>	<u>0.153</u>
Totals	100.000	4.036	100.000

Real Characteristics Of Octanes Plus:

Specific Gravity -----	4.016	(Air=1)
Molecular Weight -----	115.92	
Gross Heating Value -----	6084	BTU/CF

Real Characteristics Of Total Sample:

Specific Gravity -----	0.840	(Air=1)
Compressibility (Z) -----	0.9965	
Molecular Weight -----	24.24	
Gross Heating Value		
Dry Basis -----	1013	BTU/CF
Saturated Basis -----	996	BTU/CF

September 22, 2025

FESCO, Ltd.
1100 FESCO Avenue - Alice, Texas 78332

For: Kaiser - Francis Oil Company
P. O. Box 21468
Tulsa, Oklahoma 74121-1468

Sample: North Bell Lake Unit 618H
First Stage Separator Hydrocarbon Liquid
Sampled @ 156 psig & 74 °F

Date Sampled: 09/11/2025

Job Number: 253093.002

CHROMATOGRAPH EXTENDED ANALYSIS - GPA 2186-M

COMPONENT	MOL %	LIQ VOL %	WT %
Nitrogen	0.059	0.011	0.011
Carbon Dioxide	1.721	0.497	0.511
Methane	3.198	0.916	0.346
Ethane	2.665	1.205	0.541
Propane	4.886	2.277	1.454
Isobutane	1.264	0.700	0.496
n-Butane	4.558	2.430	1.788
2,2 Dimethylpropane	0.038	0.025	0.019
Isopentane	2.879	1.781	1.402
n-Pentane	3.911	2.397	1.904
2,2 Dimethylbutane	0.044	0.031	0.026
Cyclopentane	0.000	0.000	0.000
2,3 Dimethylbutane	0.081	0.056	0.047
2 Methylpentane	2.291	1.609	1.332
3 Methylpentane	1.426	0.984	0.829
n-Hexane	3.203	2.228	1.862
Heptanes Plus	<u>67.776</u>	<u>82.853</u>	<u>87.434</u>
Totals:	100.000	100.000	100.000

Characteristics of Heptanes Plus:

Specific Gravity -----	0.8382	(Water=1)
°API Gravity -----	37.31	@ 60°F
Molecular Weight -----	191.2	
Vapor Volume -----	13.57	CF/Gal
Weight -----	6.98	Lbs/Gal

Characteristics of Total Sample:

Specific Gravity -----	0.7943	(Water=1)
°API Gravity -----	46.64	@ 60°F
Molecular Weight -----	148.2	
Vapor Volume -----	16.58	CF/Gal
Weight -----	6.62	Lbs/Gal

Base Conditions: 15.025 PSI & 60 °F

Certified: FESCO, Ltd. - Alice, Texas

Sampled By: (16) Elizondo
Analyst: JL
Processor: JLDjv
Cylinder ID: W-1433

Conan Pierce 361-661-7015

TANKS DATA INPUT REPORT - GPA 2186-M

COMPONENT	Mol %	LiqVol %	Wt %
Carbon Dioxide	1.721	0.497	0.511
Nitrogen	0.059	0.011	0.011
Methane	3.198	0.916	0.346
Ethane	2.665	1.205	0.541
Propane	4.886	2.277	1.454
Isobutane	1.264	0.700	0.496
n-Butane	4.597	2.455	1.806
Isopentane	2.879	1.781	1.402
n-Pentane	3.911	2.397	1.904
Other C-6's	3.843	2.680	2.234
Heptanes	7.221	5.090	4.593
Octanes	7.387	5.739	5.386
Nonanes	5.017	4.495	4.290
Decanes Plus	39.977	62.546	67.791
Benzene	0.828	0.392	0.436
Toluene	3.721	2.108	2.313
E-Benzene	0.866	0.565	0.620
Xylenes	2.251	1.470	1.612
n-Hexane	3.203	2.228	1.862
2,2,4 Trimethylpentane	<u>0.508</u>	<u>0.447</u>	<u>0.392</u>
Totals:	100.000	100.000	100.000

Characteristics of Total Sample:

Specific Gravity -----	0.7943	(Water=1)
°API Gravity -----	46.64	@ 60°F
Molecular Weight-----	148.2	
Vapor Volume -----	16.58	CF/Gal
Weight -----	6.62	Lbs/Gal

Characteristics of Decanes (C10) Plus:

Specific Gravity -----	0.8609	(Water=1)
Molecular Weight-----	251.3	

Characteristics of Atmospheric Sample:

°API Gravity -----	42.58	@ 60°F
Reid Vapor Pressure Equivalent (D-6377)-----	9.28	psi

QUALITY CONTROL CHECK			
	Sampling Conditions	Test Samples	
Cylinder Number	-----	W-1433	-----
Pressure, PSIG	156	156	-----
Probe Temperature, °F	74	74	-----

* Sample used for analysis

TOTAL EXTENDED REPORT - GPA 2186-M

COMPONENT	Mol %	LiqVol %	Wt %
Nitrogen	0.059	0.011	0.011
Carbon Dioxide	1.721	0.497	0.511
Methane	3.198	0.916	0.346
Ethane	2.665	1.205	0.541
Propane	4.886	2.277	1.454
Isobutane	1.264	0.700	0.496
n-Butane	4.558	2.430	1.788
2,2 Dimethylpropane	0.038	0.025	0.019
Isopentane	2.879	1.781	1.402
n-Pentane	3.911	2.397	1.904
2,2 Dimethylbutane	0.044	0.031	0.026
Cyclopentane	0.000	0.000	0.000
2,3 Dimethylbutane	0.081	0.056	0.047
2 Methylpentane	2.291	1.609	1.332
3 Methylpentane	1.426	0.984	0.829
n-Hexane	3.203	2.228	1.862
Methylcyclopentane	1.178	0.705	0.669
Benzene	0.828	0.392	0.436
Cyclohexane	1.444	0.831	0.820
2-Methylhexane	0.915	0.719	0.619
3-Methylhexane	0.985	0.765	0.666
2,2,4 Trimethylpentane	0.508	0.447	0.392
Other C-7's	0.715	0.522	0.479
n-Heptane	1.983	1.548	1.341
Methylcyclohexane	1.848	1.256	1.224
Toluene	3.721	2.108	2.313
Other C-8's	3.954	3.110	2.940
n-Octane	1.585	1.373	1.221
E-Benzene	0.866	0.565	0.620
M & P Xylenes	1.754	1.151	1.257
O-Xylene	0.496	0.319	0.355
Other C-9's	3.822	3.357	3.255
n-Nonane	1.195	1.138	1.034
Other C-10's	4.418	4.265	4.212
n-decane	0.919	0.954	0.882
Undecanes(11)	4.376	4.335	4.341
Dodecanes(12)	3.336	3.569	3.624
Tridecanes(13)	3.132	3.593	3.698
Tetradecanes(14)	2.641	3.245	3.385
Pentadecanes(15)	2.378	3.130	3.305
Hexadecanes(16)	1.957	2.754	2.932
Heptadecanes(17)	1.707	2.539	2.729
Octadecanes(18)	1.574	2.465	2.665
Nonadecanes(19)	1.524	2.486	2.704
Eicosanes(20)	1.222	2.073	2.267
Heneicosanes(21)	1.084	1.934	2.128
Docosanes(22)	0.980	1.822	2.016
Tricosanes(23)	0.878	1.692	1.884
Tetracosanes(24)	0.789	1.576	1.762
Pentacosanes(25)	0.719	1.489	1.673
Hexacosanes(26)	0.657	1.409	1.590
Heptacosanes(27)	0.612	1.364	1.545
Octacosanes(28)	0.560	1.289	1.466
Nonacosanes(29)	0.526	1.251	1.427
Triacotanes(30)	0.473	1.159	1.327
Hentriacotanes Plus(31+)	<u>3.515</u>	<u>12.152</u>	<u>14.228</u>
Total	100.000	100.000	100.000



Firm Proposal

Kaiser Francis Oil & Gas

Casey Reiningger

2/9/2023



Cimarron's product and service offering has greatly expanded following the recent acquisitions of HY-BON and Aereon and their associated brands of products:

Products and Services

Emissions Control	Oil and Gas Processing	Services
Vapor Recovery Units: • Compression-base: Screw, Vane Compressors, Plunger Lift Pumps • Activated Carbon-based Vapor Recovery Systems Enclosed Combustion: • Quad O Combustors (98% DRE), Thermal Oxidizers, Vapor Combustion Units (99.9% DRE), CEBT™ (99.99% DRE, low NOx) Smokeless Flares: • High Efficiency Assisted (air, steam, gas), Utility, Derrick, Ground Flares, DreamDuo.    	Production and processing: • Modular Production Packages • Separator • Gas Filtration • Glycol Dehydration • Gas Production Units • Oil and Gas Heaters • Heater Treaters • Vapor Recovery Towers • BTEX Eliminators • Plunger Lift Pumps • API Tanks  CREATING A CLEANER ENVIRONMENT™	Field Services: • Startup & Maintenance • Spare parts • Lease/Rentals • LDAR Detection Automation: • Burner Management Systems • Emissions Control Real-time Monitoring • DRE optimization (DRE-Max™)   

Segments and Applications

Oil & Gas Focus Areas	Expanded Focus Areas for Combustion Applications
Upstream: • Wellhead Oil and Gas Handling Production equipment to include separator packages, heater treaters, gas production units (GPUs), Line Heaters, Tanks, Tank Vapor Combustors, Flares, Mechanical Vapor Recovery Midstream: • Gas Processing applications to include gas dehydration, gas filtration, gas line heaters, flares combustion, BTEX Eliminators Downstream: • Loading Terminal Vapor Combustors, Carbon Vapor Recovery, Refinery spec Flares & Combustors	• Biogas • Agricultural • Landfill • Wastewater Treatment • Coal Mines • Industrial • Aerospace

Kaiser Francis Oil & Gas
Reference: DEHY Combustors

I am pleased to offer the following firm proposal for your consideration for the above referenced application. Thank you for considering Cimarron for this project and we are looking forward to working with you.

Headquartered in Houston, TX, with operations worldwide, we offer products and services with the mission of reducing greenhouse gas emissions for all markets as well as enabling our energy customers to safely and responsibly optimize hydrocarbon production, transportation, processing and storage through best-in-class solutions.

Our suite of proprietary environmental technologies and engineered solutions are designed to recover escaping methane for return to the value stream; and/or to capture and destroy greenhouse gas and other harmful emissions, including methane, carbon dioxide (CO₂), nitrogen oxide (NO_x), sulfur oxide (SO_x) and volatile organic compounds (VOCs).

We embrace the more recent worldwide adoption of ESG initiatives and are positioned to facilitate the achievement of these shared objectives with our customers and the communities we share. We benefit from robust history of product innovation, and interaction with our partners, including important regulatory endorsements.

Please contact me if you have any questions or require additional information.

Regards,

Robert Webb
Regional Sales Manager
Eagle Ford & Permian

Cimarron
Mobile: 512.694.9789
rwebb@cimarron.com

1.Commercial:

Item Pricing/Delivery					
Item	Description	Qty	Price (Each)	Price (Total)	1st Unit Delivery (Weeks ARO)
1	Combustor - AB200 - 47"OD x 20' OAH	1	\$34,400	\$34,400	5, OKC Area
1 BMS	ARC Controller w/ Remote BMS Module, BMS FW	1	\$3,600	\$3,600	5, OKC Area
1 Opt.	Kit Bird Screen AB200	1	\$1,600	\$1,600	5, OKC Area
1 Opt.	Stack Extension AB200 47"ODx60"	1	\$6,500	\$6,500	5, OKC Area
1 Opt.	Concrete Pad 96"x96"x8" No Anchors	1	\$1,800	\$1,800	5, OKC Area
1 Opt.	AB200 Air Intake Windgard	1	\$800	\$800	5, OKC Area
1	Total Line Item 1 (Includes Selected Options)	1	\$48,700	\$48,700	5, OKC Area

Terms/Delivery
Deliveries quoted EXW and are estimated. EXW location and delivery to be confirmed upon request or order placement. Standard terms and conditions apply.

Delivery or Pickup Options

() Customer wishes to have these systems ready for EXW pickup at Cimarron facility based on the delivery schedule specified. Customer will have 2 weeks from notice of readiness to pick up completed systems or storage charges may apply

() Customer will specify shipping location within 2 weeks from notice of readiness to ship systems. Freight charges will be billed at cost plus 15%.

These delivery options must be indicated here or specified on the purchase order with the same format and terms.

The following drawings/documents will be submitted for information only if applicable:

- General Arrangement Drawing (Overall Dimensional Drawing)
- P&ID (when applicable)
- Vessel Arrangement Drawing (when applicable)
- Vessel Code Calculations (when applicable)

Delivery is also subject to receipt of progress payment for procurement of major materials.

By signing below or confirming in the affirmative to the email in which this document was sent, I accept all pricing, terms and conditions set forth by Cimarron Energy, Inc. as stated in the above proposal.

*Modifications to standard Cimarron Energy, Inc. terms and conditions stated below signature line, otherwise standard terms and conditions attached with this proposal shall apply.

Signature: _____

Print Name: _____

2. Technical

Enclosed Combustor - AB-200

SL COMSTDAB200-2.0

Combustion Chamber

- 47" Diameter enclosed combustion chamber, 20 feet overall height
- Single piece design for ease of transportation and installation
- Material of Construction
 - Flare Stack Enclosure: 304SS

Internal Burner Nozzle Assembly

- Proprietary Design Promotes Air Induction & Complete Combustion
- Requires No Assist Gas, No Steam, No Premixing, and No Blowers
- 3" x 150# RFSO Stainless Steel Inlet Nozzle For Waste Gas
- 304 Stainless Steel Piping
- Gas Fittings in Accordance with NFPA, UL, and/or CSA
- Flare Inlet Line (Shipped loose for field installation) including Pneumatic SDV & Deflagration Arrestor, see below for instrument details.

Cimarron Standard Pilot

- Electric Spark Ignition
- Pilot Monitored Via Ionization Rod
- Pilot Nozzle/Body - 310/316SS
- Pilot Fuel Gas Assembly Line Including:
 - Pilot Isolation Ball Valve 1/2IN 150# ONE PIECE 304SST
 - Pilot Shutdown Solenoid Valve 1/4IN 2WAY 24VDC

Standard Accessories - Included

Description	OEM	OEM Model #	QTY
Deflagration Arrestor RF 3In CS X SST	Generic	SL 156527	1
Valve, Butterfly Pneumatic 3IN LP IRON 304 SS	Cimarron	SL 156398	1
Pressure Transmitter 1/2" NPT 0-50IN H2O W/ 6IN LEADS 304 SS	Cimarron	Generic	1
Sight Glass 2" MNPT without Reflector 304 SS	Generic	SL 201061	1
Thermowell 9" X 0.260 BORE 1/2IN MNPT STRAIGHT 304 SS	Generic	SL 157953	1
Stack Thermocouple 9" TYPE K 304 SS	Generic	SL 157952	1

Utilities

Pilot Gas:	Propane: 15 SCFH @ 4 psig If Natural Gas is used: 30 SCFH @ 8 - 10 psig (per ignitor) Max Inlet Pressure: 30 psig
Electrical:	24 VDC (Controls)
Instrument Air	80 psig minimum

Optional Accessories

Description	OEM	OEM Model #	QTY
Kit Bird Screen AB200	Cimarron	SL 201068	1
Weldment Stack Extension AB200 47"ODx60"	Cimarron	SL 3503805	1
8'x8'x8" Concrete Pad For AB-200 No Anchors	Cimarron	SL 119524	1
AB200 Air Intake / Windguard	Cimarron	SL 159193	1

Operational Clarifications

OOOO (Quad O) Certified IAW USEPA 40 CFR 60, App. A, Source Emissions Test Methods.

Cimarron Energy guarantees the Quad-O certified combustor proposed in this bid will meet a minimum Destruction Removal Efficiency (DRE) of 98% if all the below conditions are met:

Max water vapor content in the waste stream: 4% vol.

Min temperature in the combustion chamber: 1400 F

Min Lower Heating Value (LHV) of the gas: 800 BTU/scf

Max Thermal Duty: Per Technical Section of this Proposal

Please note that Cimarron may still be able to guarantee 98% DRE for applications where some of the above conditions are not met. For these applications, please contact the Application Engineering Team.

Guarantee applies only to new units purchased after 1Dec2021.

- This is a non temperature-controlled unit, therefore NOx and CO emissions cannot be guaranteed. This unit is not insulated. Customer to inform if there are any special requirements regarding maximum allowable temperature around the unit.

- The unit may not meet all structural requirements, including Wind and Seismic ratings, of the end user. Customer to inform if there are any structural requirements to consider.

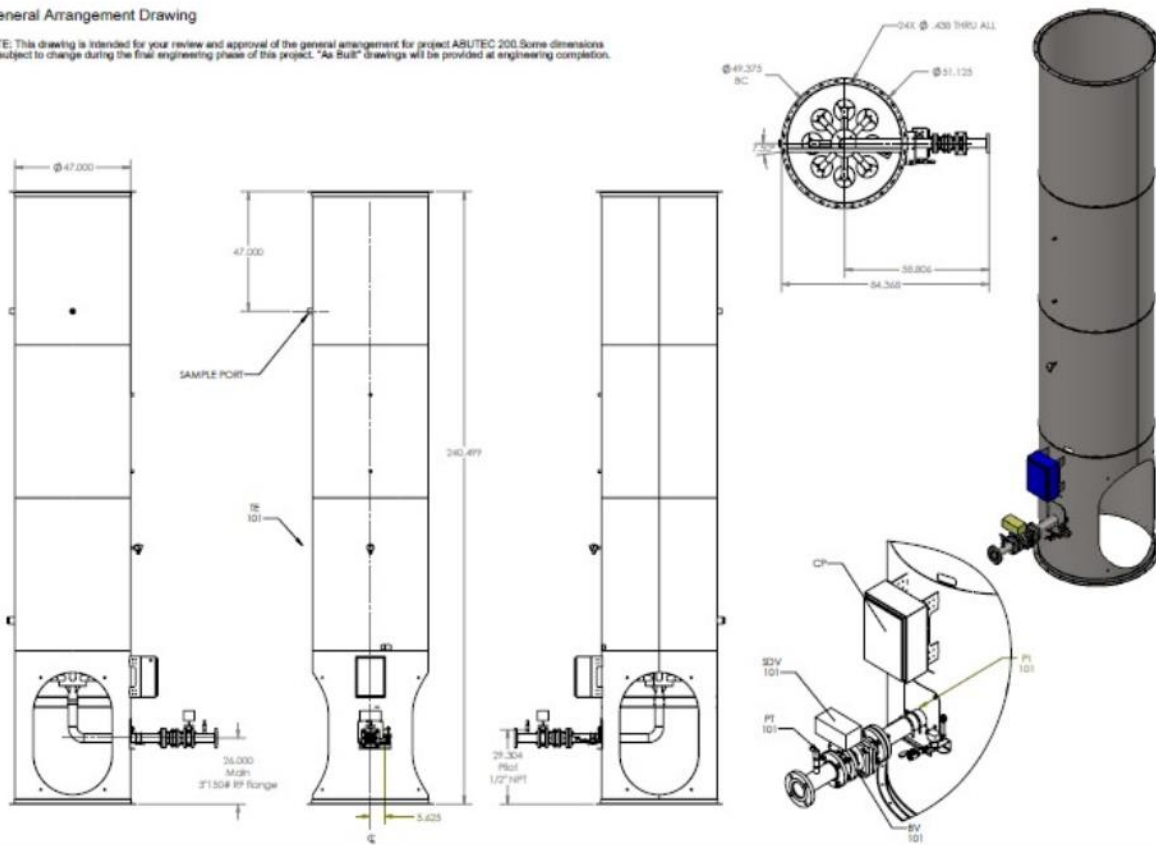
Process Conditions

Process Conditions	Parameter
Gas Flow Rate (MSCFD)	200
Pressure - Inlet (Oz)	4
Gas Specific Gravity	1.5
Process guarantee applies only to conditions listed.	

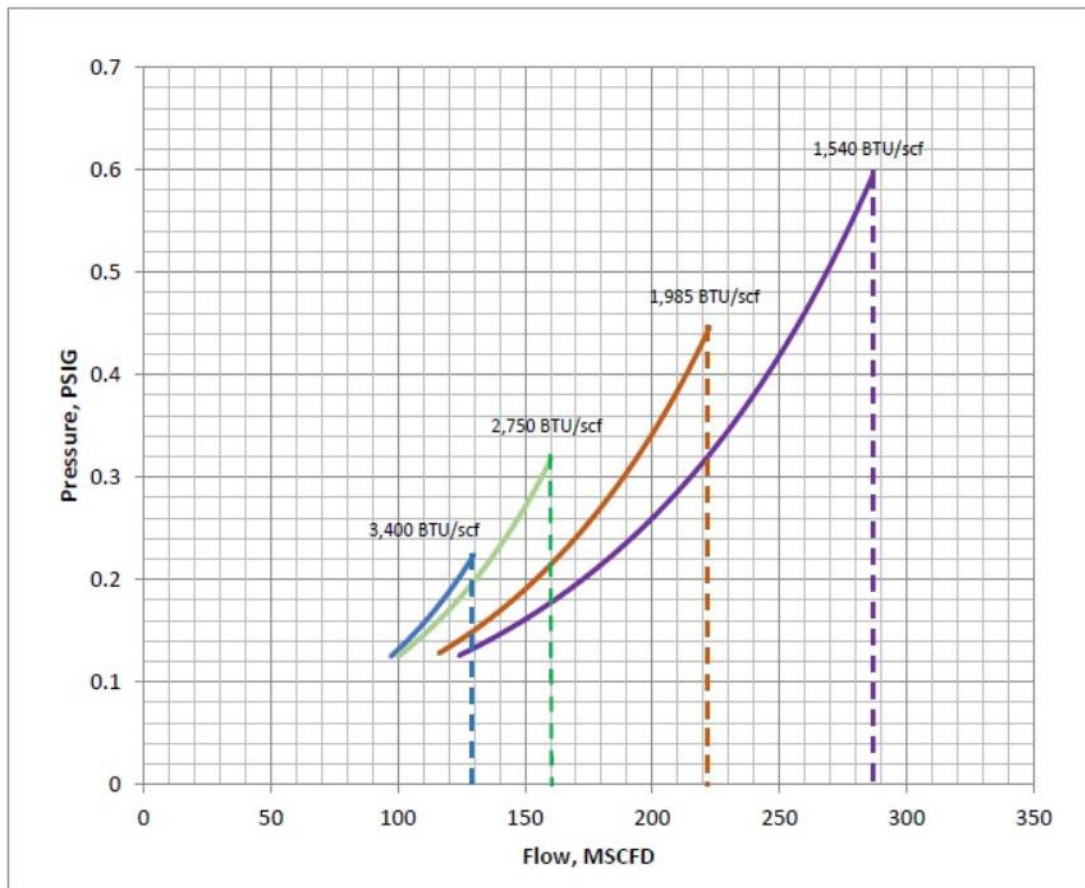
Unit Illustrations (For information only, actual drawings to be provided upon purchase)

General Arrangement Drawing

NOTE: This drawing is intended for your review and approval of the general arrangement for project ABUTEC 200. Some dimensions are subject to change during the final engineering phase of this project. "As Built" drawings will be provided at engineering completion.



AB-200 Flow Curve



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

Included

Description

ARController BMS with Firmware

Ignitor and Install Kit

Arc Burner Management 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	N/A	N/A
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	No	No
Control Enclosures Drawings	No	No	No	No
Operating & Maintenance Manuals (Upon RTS)	No	No	No	No

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

3.2. Documentation Packages

Prices listed per unit (design, package, vessel) unless noted otherwise. All data packages provided by unit ready to ship date unless noted otherwise.

Description	Type	Price
Standard Documentation Package and • U1A Report (if applicable) • Picture of Nameplate • Inspection Checklists • NDT Reports • Hydrostatic Test Charts (1 Hour Chart) • Post Weld Heat Treat Documentation (If applicable) • MTRs on major pressure containing components >15 psig (applies to code stamped pressure containing components only, typically pressure vessel heads and shells. Customer to clarify specific MTRs if any additional needed).	Option	\$600
Hard copies of Documentation Packages	Add-On	\$100

3.3. Fabrication Documentation Individual Pricing

The following is a list of ala cart data fabrication documentation options. Price listed is per unit unless noted otherwise.

Description	Price
OEM Tagged Item Specification Sheets & Certifications	
Certifications for Tagged Items	\$200
Certificate of Compliance/Conformance	\$50
Coating Data Sheets	\$50
Mill Test Report (MTR)	
All MTR's including Heads, Shells, Plate, Pipe, Flanges, Couplings, and fittings. Please specify if any other MTR's are needed (this may result in a higher rate).	\$300
Welding Records	
Welding Procedure Specification (WPS), <u>One-time Fee</u>	\$100
Welder Certifications/Procedure Qualification Record (PQR), <u>One-time Fee</u>	\$100
Heat Maps, Weld Maps	\$200
Post Weld Heat Treatment Records	\$100
Non Destructive Testing (NDT) Reports	
Hydrostatic Test Chart and Calibration Certification	\$100
Other NDT Test Certification (UT, RT, MT, etc.)	\$100

3.4. Engineering Documentation

Standard engineering documentation provided free as noted above in table 3.1. Additional requested documentation not noted as included in pricing above charged at an hourly rate of \$125/man hour. The following table serves to provide budgeted hours by documentation type.

Description	Budgeted Hours
Custom Operations Manual (Custom operations manual including operation procedures, spares lists, troubleshooting, and equipment process writeup)	10-30 hours per unit
Equipment/Instrumentation/Sizing Datasheets (Data sheet on unit per company or Cimarron standard template. Shows design data, equipment line diagram (not P&ID), connection schedule, etc., Not an OEM brochure or cut sheet)	2-4 hours per data sheet
Instrumentation OEM Brochures & Cut Sheets (OEM brochures and cut sheets on instruments placed in the final job data book)	2-4 hours per unit
Lifting Analysis (shackles, spreaders bar, pins, guide wire) (Lifting diagram showing unit lift plan, bolting diagram)	10-20 hours per unit
Process sizing/code calculation (Additional process calculations such as B31.3 line sizing, pressure calculations, pressure vessel sizing calculations, instrument sizing, pump sizing, wind & seismic calculations, etc.)	2-10 hours per unit
Structural calculation (Beam calculation per AISC Steel Construction manual)	10-15 hours per unit

4. Clarifications

4.1. Standard Clarifications

- Unit pricing includes the unit scope based on the technical specifications listed in section 2, with any clarifications as noted in Section 4. No other scope provided.
- Unit pricing offered herein is valid for a purchase order received for the stated quantity. If fewer than the stated quantity of units is purchased, pricing is subject to change.
- Bid validity is two (2) weeks from the date of this Proposal.
- In-Stock Equipment and lead time proposed subject to prior sale.
- ARO, After Receipt of Order, is defined as the date Terms and Conditions have been agreed upon by both Cimarron and the customer and the purchase order has been accepted by Cimarron Energy.
- ARAD, After Receipt of Approved Drawings, is defined as the date the customer has approved fabrication level drawings for the products purchased as described in this proposal. The customer is allowed five business days to review drawings after submitted by Cimarron for approval before delivery dates are subject to change.
- The equipment quoted in this proposal is based on
 - (i) current shop load and subject to prior sale and management approval;
 - (ii) if any drawings require the Customer's approval pursuant to this Proposal, all completion and delivery dates and price will be finalized after such drawings are finalized and approved as set forth herein; and
 - (iii) any changes to the scope of this Proposal may affect price and completion dates.
- **Material Escalation:** In the event of significant price increase of material during the performance of the contract through no fault of Cimarron, the contract sum, time of completion or contract requirements shall be equitably adjusted and presented via Change Order to the customer. A change in price of an item of material will be considered significant when the price of an item increases 10% percent between the date of purchase order acceptance and the date of material purchase to support quoted lead time. Cimarron to provide evidence of quoted versus escalated purchase price and delivery.
- **Inspections:** Unless noted otherwise, inspections by 3rd party or customer shall be announced within 5 business days prior to arrival on-site. Hold points shall be agreed upon prior to commencement of fabrication. Extra cost and delivery impact due to inspections and/or inspection on scope not agreed upon or referenced within this proposal subject to Change Orders based on time and material costs incurred by Cimarron Energy.
- **Customer Free-Issued Items:** All customer free-issued items to be quality checked by Cimarron. Price and lead time subject to change due to any delivery or quality issues of free-issued items.
- **Commercial Exclusions**
 - Whereas regards statements in client specifications or purchase orders concerning specification order of precedence, please be advised that Cimarron proposal,

including its integral exclusion list, precedes and precludes all other documents or agreements whether written or verbal.

- Freight costs and logistics will be offered to our clients as an optional price or as part of the base price, but not at cost as the phrase “prepay and add” is sometimes interpreted.
- Cimarron strictly prohibits the use or sale of our equipment in countries sanctioned by the United States Government such as: Iran, Syria, Sudan, North Korea, and Cuba.
- All documentation will be supplied in Acrobat pdf format, not Word, Excel, AutoCAD, or any other format.
- Please note that documentation and drawing delivery dates are as stated in our proposal, however, if a VDS applies to the project, all delivery dates must be agreed to in writing on a document by document basis.
- Documentation Legalization Costs.
- Our operating and maintenance manuals and quality dossiers will be provided in the English language. Translation of the O&M manuals is available at an additional cost, however, only text generated by FII will be translated. Drawings, cut sheets, data sheets and/or standard documents will be provided in English.
- No Cimarron presence at meetings (including, but not limited to, kick-off meetings, HAZOP meetings, drawing review and inspection / certification meetings) is included, unless explicitly mentioned in section 1.3.
- Spare parts when quoted do not include cross sectional drawings, export packing or freight.
- There are no bank guarantees, performance bonds, or warranty bonds included in our scope of supply or price. Cost for these requirements will be added on to our base price quoted as options. All bond and/or bank guarantee formats, if applicable, must be agreed to in writing by Cimarron.
- Storage of equipment after notification of readiness for shipment.

4.2 Standard Technical Clarifications

- **Welding:** Cimarron uses welding processes that produce high quality welds with the metallurgical properties required for Cimarron Energy Systems fabricated equipment. Cimarron weld procedures and welders are qualified in accordance with A.S.M.E. Section IX. Qualifications to other codes and standards have not been considered. Welding procedures will be submitted for client review and / or approval as part of the Quality Plan submission following the kick-off meeting.
- **Origin of Material Requirements:** Cimarron Energy reserves the right to source at own discretion when no Origin of Material Requirements stated.

4.2.1 Production Equipment Only

- **Standard Production Equipment Paint Clarifications:** On equipment quoted with Cimarron standard paint specifications (CIM-ENG-MECH-001 Rev. 3), the following clarifications are noted:
 - Standard top coat color unless noted otherwise: Grey
 - Standard Low Temp (<350°F) Surface Prep/Top Coat: SP-3/Alkyd
 - Option 1 Low Temp (<350°F) Surface Prep/Primer Coat/Top Coat: SP-6/Apoxy/Acrylic Polyurethane
 - The following surfaces shall not be coated or painted, unless otherwise specified: Porcelain, Gauge glasses, Meter faces, Valve stem and threads, Stainless Steel Nameplates, Aluminum and Stainless steel, Insulation or fireproofing, Galvanized steel and Concrete, transit, masonry, stucco, etc.
 - Factory finished equipment, including compressors, pumps, control valves, etc., will keep manufacturer standard coating unless otherwise specified
- **Standard Production Equipment Hydrostatic Testing:**

Unless noted otherwise in this proposal by specifically complying with Customer Noted Specifications, the Cimarron standard hydrostatic test is per the following:

 - Vessels with design pressure > 15 psig will be hydrostatically tested to 1.3 times MAWP per ASME BPVC Sect. VIII Division 1. using corrosion-inhibited water for one (1) hour minimum. The testing will be witnessed by a Cimarron Energy Quality Controlled inspector only unless Inspections are agreed to as specified in this section.
 - Typical welded piping sections with design pressure >15 psig are pressure tested in strict accordance with ASME B31.3. This includes hydrostatic testing of each section using corrosion-inhibited water as the medium, to a pressure of 1.5 x MAWP.
 - Typical threaded piping sections are pressure tested using shop air to ~25 psi with a water/soap solution applied to each connection. This process is similar to the sensitive leak test defined in ASME B31.3 Section 345.8 and is used in lieu of a full hydrostatic or pneumatic test in order to reduce the risk of damage to the equipment during long periods of storage. Pressure is slowly ramped up to the ~25 psi test pressure to allow for pressure equalization through the components and to check for leaks.
- **Standard Production Equipment NACE MR0175 Clarification:** Cimarron Energy cannot fully comply with ANSI/NACE MR0175/ISO 15156-2:2015 without the end user providing “in situ PH and H₂S partial pressures and their variations with time” along with a gas sample containing H₂S and H₂O content and intend operating conditions. In lieu of being provided this required information, Cimarron Energy complies with the following selected principles from NACE MR0175 in vessels proposed as “Fit for Sour Service” or “NACE”:

- Hardness Testing in section 7.3.3 per maximum hardness values listed in Table A.1. Stress-relieving (PWHT) not included and to be provided at extra price to the customer if required by Section A.2.1.4.
- Select SSC-resistant steels to be used in design provided the end-user has specified H₂S concentration in ppm or MOL fraction and operating pressure for the intended unit to be considered for service with H₂S present.

Cimarron Energy takes exception to all other requirements in NACE MR0175 unless noted otherwise.

4.2.2 Flare Equipment Technical Exclusions Only

- Flare Paint Clarifications: On equipment quoted with Cimarron standard paint specifications (CIM-ENG-MECH-001 Rev. 3), the following clarifications are noted:
 - The following surfaces shall not be coated or painted, unless otherwise specified: Porcelain, Gauge glasses, Meter faces, Valve stem and threads, Stainless Steel Nameplates, Aluminum and Stainless steel, Insulation or fireproofing, Galvanized steel and Concrete, transit, masonry, stucco, etc.
 - Factory finished equipment, including compressors, pumps, control valves, etc., will keep manufacturer standard coating unless otherwise specified
- Civil and foundation design for any equipment including dead men, anchor bolts or nuts, design of anchor bolt length or projection as this is part of civil engineering foundation design.
- When a guy wire supported flare is offered, our scope of supply ends at the spelter socket or turnbuckle and pin. Any additional hardware required to anchor the guy wire, such as a ring or plate, is considered part of the deadman design and is excluded.
- This design is exclusive of all external loadings due to upstream piping. Wind, seismic and temperature loadings have been considered. Allowable nozzle loads other than those published by API-537 are not considered.
- Air Craft Warning Lights unless mentioned in scope of work section of proposal.
- Bolt Kits at battery limit flanged connections.
- Supply to Customer of shop details, fabrication drawings or proprietary calculations
- Installation of equipment including supply of cranes and/or personnel. General installation instructions and assembly drawings will be provided, however, detailed erection instructions and drawings are excluded. These instructions are meant to provide guidance and general steps to complete the installation. These procedures are not intended to be a substitute for experienced installation personnel. Field assembly and erection of the flare is outside the scope of work to be provided by Cimarron and is the sole responsibility of others. It is understood that the field contractor retained for this purpose is familiar with the assembly and erection of tall towers.
- Structural design for stacks greater than one hundred feet in height does not include provision or facility for single piece lift or single point lift. Stack riser erection should take place in a vertical, section-by-section fashion.

- Stack sections will be provided in lengths of 38 feet or less with beveled ends for field welding. If flanged connections are provided on an air flare at the request of the client, the inner gas riser sections must be field welded as flanges interrupt the air flow in the outer riser and negatively affect performance.
- No interconnecting piping, wire, or conduit is included between proposed equipment, unless otherwise indicated in the scope of work section of proposal.
- The ignition system / control panel / pilots and related valve trains are a Cimarron standard package. As such, they are designed and/or manufactured according to our standards and procedures, using our standard components. All valve train components have the following characteristics: ½ to ¾ inch diameter, threaded fittings, carbon steel construction. No other materials, diameters, flange ratings, piping specifications, or additional materials or instrumentation are included, nor do any client supplied specifications apply, unless specifically agreed to in writing by Cimarron
- Refractory of any kind in flare tips, unless specifically indicated. Using refractory in flare tips is an antiquated practice that actually reduces working life by creating heat sinks, which can cause premature failure of such tips. Over time, refractory can also become brittle and fall down into molecular seals, knockout drums, and liquid seals and subsequently cause system failures.
- All calculations, engineering, and sizing provided in our proposal are preliminary and may change during detailed engineering. Optimization of the design during project phase engineering may occur and is not subject to a reduction in price.
- Dispersion calculations, nozzle load calculations, finite element analysis or other stress analysis, apart from structural calculations of the stack.
- Structural calculations will be submitted for information only, not being subject to the approval process.
- Corrosion allowance for carbon steel is 1/8 inch on wetted parts and 0 for air risers and/or air annuluses. No other corrosion allowance is applicable to our design or scope of work.
- Standard deflection criterion for guyed stacks is L/100 and for self-supported stacks and derricks is L/133. No other deflection criteria are applicable.
- NACE compliant carbon steel is not included, unless specifically mentioned under the scope of work section of the proposal.
- If NACE compliant carbon steel is proposed, materials which exceed the requirements of NACE MR-01-75 are not considered.
- Passivation or pickling of stainless steel materials or procedure, post weld heat treatment, procedures, or associated charts.
- Low temperature carbon steel is not included, unless specifically mentioned under the scope of work section of the proposal.
- Any testing or procedures not marked as included in the quality / testing section of proposal.

- Cimarron standard weld procedures apply to our equipment, unless otherwise stated in our proposal. Any request to alter or modify our current weld procedures based upon clients' internal specifications is currently excluded from our scope of supply. If new procedures are requested by the client, price and delivery impact will apply.
- Hydro-testing or procedures of any piece of equipment other than stamped ASME pressure vessels, unless specifically indicated in the proposal.
- Flare stacks are open to atmosphere; maximum design pressure is considered to be 14.5 psig. Design pressures above 14.5 psig are excluded.
- Painting or coating for stainless steel, internal surfaces of equipment or galvanized equipment.
- External insulation, insulation clips or heat tracing of any kind. Refractory or insulation is included for enclosed combustion devices.
- Armored cable or cable tray of any kind. We are supplying our standard wire and conduit within our battery limits.
- Material certification as per BSEN 10204, 3.2 (formerly 3.1A and 3.1c).

5.Domestic Field Service Rates

Permian/Delaware Field Service Rates (Regular time)	
Field Tech	\$140.00
Lead Tech	\$145.00
Automation Tech	\$155.00

Travel & Per Diem Rates	
Mileage	\$1.50 / mile
Overnight	The greater of \$200.00 / night <u>or</u> Cost + 10% GM,
Parts Discount	0
IQR Emissions Services (LDAR)	
Direct Measurement (Per test)	\$1,375.00
LDAR (Per location) *Depends on location size/# connections	\$375.00
Sub Part W (Per Day)	\$4,400.00
DI&M (Per Hour)	\$100.00
H2S Service (Per location)	\$250.00
Gas Analysis (per sample)	\$350.00

5.1. Field Service Rate Clarifications

- **Payment:** All rates are in U.S. Dollars and are exclusive of applicable taxes
- **Regular Time:** Monday through Friday excluding U.S. holidays; between the hours of 7:00 AM to 4:00 PM
- **Overtime Time:** Work more than eight (8) hours per day & the weekend. Rates are 1.5x regular time rates.
- **Premium Time:** U.S. Holidays. Rates are 2.0x regular time rates.
- **Standby Time:** Charged at applicable rate.
- **Travel Time:** Charged at the applicable service rate.
- **After Hours Call-Out:** A minimum of four (4) hours will be charged at the applicable service rate
- **Mileage & Hot Shot:** A fee of \$1.50 per mile will be charged for the use of Cimarron Energy' service trucks. A fee of \$2.25 per mile will be charged for the use of Cimarron Energy' F-550 service trucks. Hotshot will be charged at applicable travel rate.
- **Environmental:** Customer is responsible for proper disposal of all waste generated at the site. If requested, Cimarron will administer proper disposal of waste generated in accordance with applicable regulations at actual cost + 30% GM.
- **Freight & Transport:** Freight charges for parts or equipment and other third-party services provided by Cimarron will be invoiced at cost + 10% GM Services
- **Parts and Materials:** Invoiced at the greater of replacement cost or Cimarron's list price unless otherwise quoted

- **Third Party Services:** Invoiced at actual cost + 10% GM.
- **Rate Validity:** Rates are subject to change without notice
- **Fuel Surcharge:** Up to 3% surcharge applied to all field tickets based on National Fuel Averages

6. Terms and Conditions (v13.2)

Cimarron Energy, Inc.

and its Affiliates:

Flare Industries, Inc. d/b/a Aereon

and

HY-BON Engineering Co., Inc.

All quotations (offers) and sales for goods and/or services (collectively, the "Work") made by, or orders or offers for Work made to, Cimarron Energy, Inc. or its affiliates ("CONTRACTOR") by purchaser ("COMPANY") are based upon and conditioned upon acceptance of the following terms and conditions. No provision, printed or otherwise, contained in any order, acceptance, confirmation, or acknowledgment that is inconsistent with, different from, or in addition to these Standard Terms and Conditions is accepted by CONTRACTOR, unless specifically agreed to in writing. Any and all Work is provided by CONTRACTOR only under the following Terms and Conditions, and any offer or order by COMPANY for any Work shall constitute COMPANY's acceptance of these Terms and Conditions in their entirety. In the event of any conflict between or among the terms and conditions of these Standard Terms and Conditions, any Order, or any Exhibit to any such Order, the conflict shall be resolved by reference to such documents in the following order of priority of interpretation: (i) these Standard Terms and Conditions; (ii) any Exhibit; and (iii) any Order. COMPANY and CONTRACTOR further acknowledge and agree that the obligations and liabilities of the CONTRACTOR are several only, and will not be, nor construed to be, either joint with any CONTRACTOR Affiliate or joint and several with any CONTRACTOR Affiliate.

1. Quotations; Terms of Payment; Invoices; Due Date:

- (a) CONTRACTOR's quotations are valid for thirty days (30) from the date of the quotation unless otherwise stated. The latest quotation supersedes all previous quotations or correspondence concerning the transaction. The CONTRACTOR's quotations contain proprietary information of CONTRACTOR (which is subject to Section 14 herein) and are provided to COMPANY with the understanding that the information will be used by COMPANY solely for purposes of internal evaluation. The CONTRACTOR's quotations and the proprietary information contained therein may not be disclosed by the COMPANY to any third party or used in the preparation of any request for quotation for any work similar to, or as a substitution for, the Work quoted by the CONTRACTOR.

COMPANY shall pay CONTRACTOR pursuant to the prices and rates set forth in the applicable Order, or, absent such agreement, pursuant to CONTRACTOR'S standard prices and rates. CONTRACTOR shall invoice COMPANY on a monthly basis for Work performed. Payment in full for each invoice shall be due and made by COMPANY to CONTRACTOR within thirty (30) calendar days of the applicable invoice date. Progress payments will apply to any COMPANY's purchase(s) where the order(s) total exceeds \$100,000.00. Payment percentages shall be invoiced as follows: (i) 50% upon order acceptance and (ii) the final 50% prior to shipment. CONTRACTOR may invoice COMPANY upon completion of work to original specifications; subject to Section 2(d), if Change Order received after completion, charges for Change Order may be invoiced separately. If COMPANY defers delivery upon Notice of Readiness, CONTRACTOR may bill and hold, transferring title and risk of loss to COMPANY. Payment terms for international orders (orders outside of the United States) will be agreed to in the respective bid packages. Should COMPANY require CONTRACTOR to submit field tickets or sales invoices for

approval prior to invoicing, COMPANY shall approve or deny within three (3) business days of presentation, or the same shall be deemed approved. Any disputes to CONTRACTOR's invoice shall be made in writing within ten (10) days of receipt. Disputes do not affect payment terms for non-disputed amount, and payment of disputed amount shall be due no later than five (5) business days upon resolution.

- (b) If COMPANY fails to pay the amounts owed hereunder when due, COMPANY shall also pay to CONTRACTOR interest thereon from the date thereof to the date of payment at a rate equal to the lesser of (i) 18% per annum or (ii) the maximum rate permitted by applicable law. CONTRACTOR, at its sole option, and without incurring any liability, may suspend its performance until such time as the overdue payment is made or CONTRACTOR is provided assurances, adequate in CONTRACTOR's sole discretion, that the payment shall be promptly made. In the event of such suspension of performance by CONTRACTOR, there shall be an equitable adjustment made to the delivery schedule and order price reflecting the duration and cost resulting from such suspension. Payments due hereunder shall in no event be subject to set-off with any other order or business arrangement. Waivers of lien by CONTRACTOR with respect to payment due to CONTRACTOR for Work provided by CONTRACTOR under an Order shall be contingent upon CONTRACTOR receiving in full all payments due hereunder. COMPANY shall pay to CONTRACTOR for all costs and expenses related to the collection of any past due amounts, including without limitation, reasonable attorneys' fees, and expenses. COMPANY shall pay CONTRACTOR for all applicable sales and use taxes related to the Work.

2. Shipping Terms; Termination; Change:

- (a) The shipping terms for any goods shall be EX WORKS CONTRACTOR'S manufacturing facility (per the International Chamber of Commerce's INCOTERMS 2020), unless otherwise agreed by CONTRACTOR in writing. If the COMPANY requests CONTRACTOR to arrange for shipment of any goods or any parts thereof, COMPANY shall reimburse CONTRACTOR for all freight, insurance and other shipping-related costs and handling fees for such shipment. If the COMPANY has not issued inspection or shipping instructions by the time the goods are ready for shipment, CONTRACTOR may select any reasonable method of shipment, without liability by reason of its selection. Shipments made on COMPANY's behalf shall be insured at COMPANY's expense. Shipment of goods held by reason of COMPANY's request or inability to receive the goods will be at the COMPANY's risk and expense. Timely delivery of the goods shall be contingent, in part, upon, CONTRACTOR's receipt, within two weeks of the respective initial submittal, of all of the final customer approvals of drawings and other documents requiring customer approvals and CONTRACTOR's receipt of the order containing all of the mutually agreed upon terms and documents by a date no later than that set forth in the CONTRACTOR's proposal.
- (b) If COMPANY sends written notice to cancel an order, said notice will be effective upon receipt. COMPANY will be responsible for the total cost of the products produced to date. An additional cancellation charge of 50% of the unfilled order value will apply to orders manufactured to COMPANY specifications.
- (c) Either Party may terminate an Order for Work upon written notice to the other Party if the other Party has failed to cure a default within the appropriate cure period set forth in Section 8. Either Party may also terminate an Order for Work upon written notice to

the other Party if the other Party (i) makes a general assignment for the benefit of its creditors; (ii) institutes proceedings to be adjudicated a voluntary bankrupt, or consents to the filing of a petition of bankruptcy against it; (iii) seeks reorganization under any bankruptcy act, or consents to the filing of a petition seeking such reorganization; or (iv) has a decree entered against it by a court of competent jurisdiction appointing a receiver, liquidator, trustee or assignee in bankruptcy or in insolvency covering all or substantially all of such Party's property or providing for the liquidation of such Party's property or business affairs, and such decree is not vacated within 60 calendar days.

- (d) No material modification or change to the provisions of an Order for Work ("Change Order") shall be valid unless signed by both Parties. If any Change Order causes an increase in the cost, or the time required for performance, or otherwise affects any other provision of the Order for Work, an equitable adjustment shall be made.

3. Title to Certain Goods; Risk of Loss: Title to all goods furnished by CONTRACTOR and incorporated or intended to be incorporated into the Work shall transfer to COMPANY upon full and complete payment to CONTRACTOR for such Work. Notwithstanding the foregoing, and subject to bill and hold provisions in Section 1(a), the risk of loss of such goods shall transfer to COMPANY upon delivery. Upon investment of title of the Work in and to COMPANY, the Work shall be the sole tangible personal property of the COMPANY. However, COMPANY's rights in such Work do not include and specifically exclude any intangible or Intellectual Property Rights of CONTRACTOR or of any third party embodied, contained, referenced, described, or disclosed therein except as otherwise provided in this Section 3. However, CONTRACTOR grants to COMPANY a personal, perpetual, nonexclusive, worldwide, royalty free license to use the CONTRACTOR's Intellectual Property Rights embodied, contained, referenced, described, or disclosed in such Work solely for the purpose to operate and maintain the Work provided by CONTRACTOR pursuant to the Order. "Intellectual Property Rights," for the purposes of Section 3, means all intellectual property rights, including patents, copyright, designs, trade or service marks, semiconductor topography rights, database rights, rights in confidential information, including know-how and trade secrets, moral rights or other similar rights in any country (all whether or not registered, including all applications for any of them and all equivalent rights in all parts of the world) and all rights of confidence, whenever and however arising for their full term and including renewals and extensions.

4. Limited Warranties:

- (a) Each Party represents and warrants that (i) it has the right, power and authority to enter into the Order for Work and to fully perform its obligations under such Order; (ii) the entering into and performance of the Order for Work by it does not violate, conflict with, or result in a material default under any other contract or agreement to which it is a party, or by which it is bound; and (iii) it will comply with all applicable laws, regulations, rules and orders in all material respects.
- (b) COMPANY warrants to CONTRACTOR that, during the term of the Order for Work: (i) COMPANY and its employees, CONTRACTOR and its agents will fully cooperate with CONTRACTOR to provide CONTRACTOR and its employees, CONTRACTORS, vendors and agents with all necessary and reasonable access to COMPANY's applicable premises and sites; and (ii) COMPANY'S operations will be conducted in a commercially safe and reasonable manner at all COMPANY premises and sites to which CONTRACTOR and its employees, CONTRACTORS, vendors and agents will need access in order to perform the Work.
- (c) **EXCEPT AS EXPRESSLY PROVIDED IN SECTION 4(d), THE WORK SHALL BE PROVIDED "AS IS". TO THE FULLEST EXTENT PERMITTED BY LAW, CONTRACTOR DENIES AND DISCLAIMS ALL IMPLIED AND ALL STATUTORY WARRANTIES, INCLUDING WITHOUT LIMITATION, WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, QUALITY OR NON-INFRINGEMENT AND ALL OTHER WARRANTIES OTHER THAN THOSE**

EXPRESSLY SET FORTH IN THIS SECTION. CONTRACTOR DOES NOT WARRANT THAT THE WORK WILL BE ERROR-FREE. CONTRACTOR SHALL HAVE NO LIABILITY FOR THE DESIGN OR ENGINEERING OF THE WORK IF PERFORMED TO COMPANY SPECIFICATIONS OR DESIGN, EVEN THOUGH CONTRACTOR MAY HAVE PARTICIPATED IN ITS DEVELOPMENT, NOR FOR ANY COMPANY-FURNISHED MATERIALS. COMPANY ACKNOWLEDGES AND AGREES THAT COMPANY HAS SOLE RESPONSIBILITY FOR DETERMINING THE SUITABILITY OF THE WORK FOR ITS OPERATIONS AND THE RESULTS AND DECISIONS FROM ITS USE THEREOF.

- (d) CONTRACTOR warrants:

- 1. With respect to goods, subject to the limitations contained herein, for a period of eighteen (18) months after the date of notice of availability for shipment of the goods, or one year after startup of the goods, whichever occurs first (the "Warranty Period"), such goods will be free from material defects in materials and workmanship and will conform to CONTRACTOR's published specifications.
- 2. With respect to Services, the Warranty Period for services furnished by CONTRACTOR shall be ninety (90) days from completion of the services.
- 3. If during the Warranty Period, any Work furnished by CONTRACTOR proves to be materially defective in material or workmanship, CONTRACTOR will, at CONTRACTOR's discretion, either repair the Work or supply identical or substantially similar replacement parts EX WORKS manufacturing facility or reperform the Work as the case may be; provided that CONTRACTOR is promptly notified in writing during the Warranty Period. Any repaired or replacement parts will be warranted against defects in material or workmanship only for the unexpired portion of the Warranty Period applicable to the particular Work. Parts not manufactured by CONTRACTOR are subject only to warranties of CONTRACTOR's vendors, and CONTRACTOR shall assign to COMPANY all transferable rights in such vendors' warranties. CONTRACTOR shall furnish to the COMPANY reasonable assistance in enforcing such rights. CONTRACTOR will not be responsible for costs of making access for, or of export/import, shipment, removal, or installation of, any items needed to repair or replace any defective Work. Routine maintenance-related or consumable items shall be outside the scope of this limited warranty. With regard to warranty-related remedial work, CONTRACTOR will not be responsible for materials or workmanship of others or shipment, labor, and other related expenses for any work performed by others in the repair or replacement of defective Work, without CONTRACTOR's prior written consent. CONTRACTOR's performance guarantees, if any, shall be deemed to be met by a satisfactory demonstration of the performance of the Work during a performance test, which shall be the responsibility of the COMPANY, pursuant to mutually agreed upon test procedures. If the performance test is not completed within forty-five (45) days after notice of availability for shipment of the Work, the performance test shall be deemed to be satisfactorily performed for any and all purposes. These limited warranties will be voided if: (i) CONTRACTOR, or CONTRACTOR's certified subcontractor, was not utilized to confirm proper installation of the goods, or to provide commissioning of such goods, (ii) the Work was not stored, installed, maintained, or operated in accordance with accepted U.S. industrial practice and any recommendations provided by CONTRACTOR; (iii) the Work was subjected to any accident, misapplication, environmental contamination, corrosion, abrasion, abuse or misuse; (iv) COMPANY used, repaired, or modified the Work after discovery of the defect without CONTRACTOR's prior written consent; or (v) COMPANY fails to permit CONTRACTOR to examine the Work and operating data or fails to furnish routine operating data sufficient to determine the nature of the defect claimed.

- (e) In addition to the other terms and conditions set forth herein, all Work provided by CONTRACTOR related to the installation, testing, commissioning, or maintenance of the Work at the COMPANY's premises or premises nominated by COMPANY shall be subject to the quoted terms and to the following additional terms and conditions:

1. Domestic travel in excess of four (4) hours travel time from a CONTRACTOR Service Center will require overnight accommodations and will be charged as a separate day. A surcharge of 100% will be added to the labor rate during a United States statutory holiday.
2. Standby time is considered to be that time when weather or other conditions beyond CONTRACTOR's reasonable control, or customer-related delays, prevent CONTRACTOR's personnel from working when ready and able. Standby charges are charged at labor rates as stated above. Specified charges for handling materials, rental equipment, tools, and other items provided at COMPANY's request will be charged at cost, plus twenty-five percent (25%). Such charges will be substantiated with a copy of the third-party invoice to CONTRACTOR.
3. Commissioning, maintenance, or other services provided in connection with the Work with less than seven (7) days' notice may be subject to a fifteen percent (15%) surcharge for all service-related items (not including materials and parts).
4. Extension of any service trip requires written confirmation by CONTRACTOR's management. In the event that air travel is required of CONTRACTOR's technicians, tools will not be carried. In such circumstances, all tools and mechanical/electrical assistance for technicians will be provided by COMPANY. If the required tools are not available, the technician will either purchase tools locally, or ship the required tools to the site, at COMPANY's expense.
5. Specialized training, medical exams, and/or substance testing for site access is not included in the above rates. If a specific clause of COMPANY's safety program requires this training or testing, CONTRACTOR will make reasonable efforts to comply with the request and will add any costs connected therewith to CONTRACTOR's invoice.

5. Indemnities:

- (a) **FOR PURPOSES OF THESE STANDARD TERMS AND CONDITIONS, THE TERM "CONTRACTOR GROUP" IS USED AS A REFERENCE INDIVIDUALLY AND COLLECTIVELY FOR CONTRACTOR AND ITS PARENT, SUBSIDIARY AND AFFILIATED COMPANIES, CONTRACTOR'S CONTRACTORS AND SUBCONTRACTORS OF ALL TIERS AND ITS AND ALL OF THEIR OFFICERS, DIRECTORS, EMPLOYEES, AGENTS, ASSIGNS, INVITEES, REPRESENTATIVES, ANY OF THEIR SPOUSES, RELATIVES, DEPENDENTS, OR ESTATES, AND THE SUBROGEEES OF ALL SAID PARTIES. SIMILARLY, THE TERM "COMPANY GROUP" IS USED AS A REFERENCE INDIVIDUALLY AND COLLECTIVELY FOR COMPANY AND ITS PARENT, SUBSIDIARY AND AFFILIATED COMPANIES, COMPANY'S CONTRACTORS AND SUBCONTRACTORS (WITH THE EXCEPTION OF CONTRACTOR) OF ALL TIERS AND ITS AND ALL OF THEIR OFFICERS, DIRECTORS, EMPLOYEES, AGENTS, ASSIGNS, INVITEES, REPRESENTATIVES, ANY OF THEIR SPOUSES, RELATIVES, DEPENDENTS, OR ESTATES, AND THE SUBROGEEES OF ALL SAID PARTIES.**
- (b) **CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR AND AGREES TO RELEASE, DEFEND AND INDEMNIFY THE COMPANY GROUP FROM AND AGAINST, AND HOLD EACH OF THEM HARMLESS FROM, ANY AND ALL CLAIMS AND LOSSES ARISING OUT OF OR RELATED TO ANY DEATH OR BODILY INJURY OR DISABILITY, OR ANY PROPERTY DAMAGE OR PROPERTY LOSS, OF ANY OF THE CONTRACTOR GROUP AND ARISING OUT OF OR RELATED TO THE ORDER OF WORK OR THE WORK. CONTRACTOR'S**

OBLIGATIONS IN THE PRECEDING SENTENCE SHALL

APPLY REGARDLESS OF WHETHER CAUSED OR CONTRIBUTED TO BY THE SOLE, JOINT, OR CONCURRENT NEGLIGENCE, STRICT LIABILITY, GROSS NEGLIGENCE, WILLFUL MISCONDUCT, BREACH OF WARRANTY, OR OTHER FAULT OF ANY OF THE COMPANY GROUP, THE UNSEAWORTHINESS OR UNAIRWORTHINESS OF ANY VESSEL OR CRAFT, A PREEXISTING CONDITION, BLOWOUT, EXPLOSION, OR FIRE.

- (c) **COMPANY GROUP SHALL BE SOLELY RESPONSIBLE FOR AND AGREES TO RELEASE, DEFEND AND INDEMNIFY THE CONTRACTOR GROUP FROM AND AGAINST, AND HOLD EACH OF THEM HARMLESS FROM, ANY AND ALL CLAIMS AND LOSSES ARISING OUT OF OR RELATED TO ANY DEATH OR BODILY INJURY OR DISABILITY, OR ANY PROPERTY DAMAGE OR PROPERTY LOSS, OF ANY OF THE COMPANY GROUP AND ARISING OUT OF OR RELATED TO THE ORDER OF WORK OR THE WORK. COMPANY'S OBLIGATIONS IN THE PRECEDING SENTENCE SHALL APPLY REGARDLESS OF WHETHER CAUSED OR CONTRIBUTED TO BY THE SOLE, JOINT, OR CONCURRENT NEGLIGENCE, STRICT LIABILITY, GROSS NEGLIGENCE, WILLFUL MISCONDUCT, BREACH OF WARRANTY, OR OTHER FAULT OF ANY OF THE CONTRACTOR GROUP, THE UNSEAWORTHINESS OR UNAIRWORTHINESS OF ANY VESSEL OR CRAFT, A PREEXISTING CONDITION, BLOWOUT, EXPLOSION, OR FIRE.**
- (d) CONTRACTOR will, at its expense, defend and indemnify COMPANY from any suit or proceeding brought against COMPANY based on a claim that the goods manufactured and furnished by CONTRACTOR under the Order constitute an infringement of any United States patent, if CONTRACTOR is notified promptly in writing and given authority, information, and assistance for the defense of the suit or proceeding. Defense and settlement of any claim shall be within CONTRACTOR's sole discretion. Should it be held that the goods constitute infringement and the use of the goods is enjoined, CONTRACTOR will, at its own expense and discretion, either procure for COMPANY the right to continue using the goods, replace the goods with non-infringing goods, modify the goods to become non-infringing, or remove the infringing goods and refund the price paid for the respective goods. CONTRACTOR does not accept any liability for infringement of any chemical, process, or flow patents, or for goods designed for or used in connection with such chemical, process, or flow patents. COMPANY will indemnify CONTRACTOR from any suit or proceeding brought against CONTRACTOR by any third party based on claims that the goods provided to COMPANY infringe any such patent, or with respect to any goods designed and manufactured in accordance with designs furnished by COMPANY. CONTRACTOR's indemnity and defense obligations under this Section 5.4 shall not apply or extend to any claims, suits, proceedings, or expenses based upon the modification or enhancement of the Work by COMPANY, upon the manufacture of the goods according to the designs furnished and required by the COMPANY, or upon the use of the Work in combination with other goods, services, or technology not provided by CONTRACTOR, if such claims, suits, proceedings, or expenses would not have occurred but for such modification, enhancement, requirement, or combination.

6. Disclaimer of Consequential Damages; Limitation of Liability:

- (a) **NOTWITHSTANDING ANYTHING TO THE CONTRARY HEREIN, NEITHER PARTY SHALL BE LIABLE TO THE OTHER FOR ANY CONSEQUENTIAL, INCIDENTAL, INDIRECT LOSS OR DAMAGE OR ANY PUNITIVE DAMAGE OF ANY KIND OR CHARACTER, INCLUDING, BUT NOT LIMITED TO, ANY LOSS OF USE, LOSS OF PROFITS, LOSS OF REVENUES, LOSS OF PRODUCT, LOSS OF EFFICIENCY AND LOSS OF**

PRODUCTION, IRRESPECTIVE OF NEGLIGENCE, ARISING OUT OF THE WORK OR THE ORDER FOR WORK.

- (b) NOTWITHSTANDING ANYTHING TO THE CONTRARY HEREIN, THE TOTAL LIABILITY OF CONTRACTOR UNDER ANY ORDER FOR WORK, (IRRESPECTIVE OF WHETHER CONTRACTOR MAY HAVE BEEN OR ALLEGED TO HAVE BEEN NEGLIGENT OR OTHERWISE AT FAULT AND IRRESPECTIVE OF INSURANCE COVERAGE) SHALL BE LIMITED TO THE PRICE ALLOCABLE TO THE ORDER FOR THE WORK AND, IN NO EVENT WILL CONTRACTOR'S AGGREGATE LIABILITY EXCEED THE NET AMOUNT PAID BY COMPANY TO CONTRACTOR FOR THE WORK. COMPANY AGREES TO RELEASE, INDEMNIFY AND HOLD CONTRACTOR HARMLESS FROM AND AGAINST ANY SUCH LIABILITY IN EXCESS OF SUCH AMOUNTS. COMPANY ALSO AGREES TO PROVIDE SUFFICIENT INSURANCE (OR SHALL SELF-INSURE) FOR THE BENEFIT OF EACH OF THE PARTIES HERETO AS SHALL BE NECESSARY TO PROTECT BOTH COMPANY AND CONTRACTOR FROM ANY LIABILITY AS ALLOCATED TO COMPANY PURSUANT TO THESE STANDARD TERMS AND CONDITIONS.

7. Insurance:

- (a) Each Party shall purchase and maintain in full force and effect (with underwriters having an AM Best A- rated as a minimum), for the term of the Order for Work and two years after the termination hereof, policies of insurance covering the terms and conditions described in Sections 7.2 - 7.4. Except for the worker's compensation insurance policy, all such policies shall name the other Party as an additional insured.
- (b) *Worker's Compensation & Employers' Liability Insurance:*
1. All states where operations are being conducted,
 2. Coverage "B"- Employers' Liability Limit:
\$1,000,000 each accident \$1,000,000 each person
- (c) *Commercial General Liability Insurance:*
1. CONTRACTORS' Protective-work let or sub-let.
 2. Products and Completed Operations coverage.
 3. Contractual Liability.
 4. Minimum Coverage Limits: \$1,000,000 each occurrence/\$2,000,000 general aggregate
- (d) *Automobile Liability Insurance:*
1. Coverage to include all owned, non-owned and hired Automobiles.
 2. Minimum Coverage Limits: Combined single limit \$1,000,000 each accident

8. Default: If either Party defaults in the performance of any of its obligations under the Order for Work (subject to the provisions of Section 10), the non-defaulting Party may notify the defaulting Party of the default and the defaulting Party shall have 30 calendar days to remedy the default, provided, however, that with respect to a payment default, the defaulting Party shall have 10 calendar days to remedy the default. If such default is not cured within the applicable period, then the non-defaulting Party shall have the option to immediately terminate the Order for Work upon written notice to the other party. This remedy shall not be exclusive, however, and the exercise thereof shall not be deemed to constitute a waiver of any other rights or remedies that either Party may have under applicable law in the event of the other Party's default.

- 9. Force Majeure:** Any delays in or failures by either Party in performing its obligations hereunder (other than obligations to pay money), shall not constitute default hereunder or give rise to any claims for damages, if and to the extent that such delays or failures of performance of the Work are caused by occurrences of *Force Majeure*. For purposes of these Standard Terms and Conditions, "*Force Majeure*" includes, but is not limited to, Acts of God, wars or warlike action (whether actual or impending), arrests and other restraints of government (civil or military), terrorism, blockades, insurrections, riots,

epidemics, landslides, lightning, earthquakes, fires, sabotage, tropical storms and hurricanes, civil disturbances, tidal waves, explosions, shortages of suppliers, confiscation or seizure by any government or other public authority, and any other causes or events that are not reasonably within a Party's control. The Party experiencing an occurrence of *Force Majeure* shall notify the other Party with reasonable promptness of the existence of any such *Force Majeure* and the probable duration thereof and shall provide the other Party from time to time with information regarding the same. The Party experiencing an occurrence of *Force Majeure* shall take all commercially reasonable actions to remove the cause of the occurrence of *Force Majeure*.

10. Assignment; Successors; Third Parties:

Neither Party shall assign or transfer all or any portion of the Order for Work to any third party without the prior written consent of the other Party, which consent shall not be unreasonably withheld or delayed; provided, however, that a Party shall be entitled to transfer or assign all or any portion of the Order for Work without such consent: (i) to any of its affiliates or subsidiaries; or (ii) to the purchaser of all or substantially all of the assets of the other Party. Subject to the foregoing, the Order for Work shall be binding upon and inure to the benefit of the Parties and their respective permitted successors and assigns. Nothing in these Standard Terms and Conditions or in the Order for Work is intended to confer any liabilities, duties, rights, benefits or obligations hereunder upon any person or entity other than the Parties hereto and their respective permitted successors and assigns and expressly approved affiliates.

- 11. Waiver:** No benefit or right accruing to either Party under these Standard Terms and Conditions or under the Order for Work shall be waived unless the waiver is in a writing signed by both Parties to the Order for Work. The failure of either Party to exercise any of its rights under the Order for Work or these Standard Terms and Conditions shall in no way constitute a waiver of any of those rights, nor shall such failure excuse the other Party from any of its obligations under the Order for Work or these Standard Terms and Conditions.

- 12. Relationship of the Parties:** In the performance of the Work, CONTRACTOR is an independent CONTRACTOR. CONTRACTOR agrees that all persons engaged by CONTRACTOR to perform the Work, whether CONTRACTOR's employees or subcontractors are not the employees of COMPANY. CONTRACTOR hereby agrees to immediately reimburse COMPANY for all taxes, interest and penalties required to be paid by COMPANY under any applicable laws covering CONTRACTOR'S employees or subcontractors for performance of the Work.

- 13. Audit:** CONTRACTOR shall maintain a true and correct set of records pertaining to Work performed and all transactions directly related thereto. CONTRACTOR agrees to retain all such records for a period of not less than two years from the end of the calendar year in which the Work was performed. COMPANY may conduct a supervised audit during regular business hours after reasonable prior written notice to CONTRACTOR of such audit, within such two-year period. The audit privileges granted to COMPANY under this Section 13 are limited strictly to verifying whether CONTRACTOR has been compliant with the Order for Work and these Standard Terms and Conditions and, therefore, shall be narrowly construed and not to be used to obtain any proprietary or privileged information from CONTRACTOR such as, without limitation, CONTRACTOR's financial margins under a firm fixed price agreement for the Work, CONTRACTOR's methods of operations, or any details and/or breakdowns of costs incurred by CONTRACTOR, except for reimbursable costs allowable under an Order for Work. If an audit is commenced within such two-year period, the books and records shall be maintained by CONTRACTOR for as long as reasonably required to complete the audit.

14. Confidentiality:

- (a) The phrase "Confidential Information" shall mean any information disclosed by one Party to the other in connection with the Order for Work and the performance of the Work, including, without limitation, all information, documents, drawings, reports, manuscripts, text, drawings, photographs, video recordings, computer software, knowledge, data or other information relating to the Disclosing

Party's products, processes, know-how, designs, formulae, test data, customer lists, business plans, marketing plans, strategies, materials, goods, equipment, and pricing and availability of any services or goods, that is in written, graphic, machine readable or other tangible form and is marked "Confidential", "Proprietary" or in some other manner to indicate its confidential nature. The phrase "Confidential Information" shall not include information that: (i) is or becomes publicly available through no breach of this Section 14 by the Receiving Party; (ii) is already in the Receiving Party's possession at the time of its disclosure by the Disclosing Party; (iii) is disclosed to the Receiving Party by a third party who, to the Receiving Party's knowledge, is not prohibited from disclosing the information pursuant to a confidentiality agreement with the Disclosing Party; (iv) is intentionally or purposely disclosed, exchanged or transmitted without restriction of confidentiality by Disclosing Party to any third party; (v) is independently developed by Receiving Party without reference or exposure to the confidential information received from Disclosing Party or (vi) is required to be disclosed to a governmental agency or entity, or by law or legal process, by advice of Receiving Party's legal counsel.

(b) Each Party (a "Receiving Party") shall treat as confidential all Confidential Information received from or through the other Party (a "Disclosing Party"), shall not use such Confidential Information except as expressly permitted under these Standard Terms and Conditions, and shall not disclose such Confidential Information to any third Party without the Disclosing Party's prior written consent, provided, however, that a Receiving Party may disclose the Disclosing Party's Confidential Information to any of Receiving Party's affiliates, directors, officers, employees, attorneys, accountants, representatives, agents, consultants, advisors, partners, prospective partners, lenders, and prospective lenders (collectively, "Representatives") on a reasonable need to know basis, provided that each Representative is apprised of the confidential nature of the Confidential Information and the Receiving Party's obligations under this Section. Each Receiving Party shall be liable for any breach of this Section by any of its Representatives. Each Receiving Party shall use at least the same degree of care that it uses to prevent the disclosure of its own confidential information of like importance, but in no event with less than reasonable care, to prevent the disclosure of Confidential Information disclosed to it or its Representatives by the Disclosing Party or its Representatives under the Order for Work or these Standard Terms and Conditions.

(c) Unauthorized use by a Receiving Party of the Disclosing Party's Confidential Information could diminish the value of such information. Therefore, if a Receiving Party breaches any of its obligations with respect to confidentiality or uses any of Disclosing Party's Confidential Information in a manner that is not specifically authorized under these Standard Terms and Conditions, then the Disclosing Party shall be entitled to equitable relief to protect its interest therein, including but not limited to, injunctive relief. The rights and remedies of a Disclosing Party pursuant to this Section are cumulative to, and shall not be deemed to exclude, any other right or remedy that such Disclosing Party may have pursuant to these Standard Terms and Conditions or otherwise, at law or in equity.

(d) Notwithstanding anything to the contrary herein, any Party (and its respective employees, representatives or other agents) may disclose to any and all persons, without limitation of any kind, the tax treatment and tax structure of any transaction between the Parties and all materials of any kind (including opinions or other tax analyses) that are provided to such Party relating to such tax treatment and tax structure.

15. Entire Agreement: Except as specifically agreed in writing by the Parties, these Standard Terms and Conditions supersede all negotiations, understandings and agreements between the Parties and constitutes the entire understanding and agreement between the Parties relative to the Work. No supplement, modification or waiver of these Standard Terms and Conditions or any Order shall be binding unless executed in writing by both Parties.

16. Notices: Except as expressly provided otherwise herein, any notice from one Party to the other hereunder shall be given in writing. Any notice, payment or invoice hereunder shall be delivered to the contact person at the address of the Parties set forth on the Order for Work pursuant to these Standard Terms and Conditions, until notice is given in accordance with this Section by either Party to the other Party, in writing, of a change of contact person or address. Notice required to be given under these Standard Terms and Conditions shall be deemed given and delivered (i) upon receipt or five days after deposited in the U.S. Mail whichever is earlier, postage paid, via certified mail, return receipt requested, (ii) upon transmission via facsimile or email evidenced by the sender's electronic mail or fax machine-generated confirmation of transmission, (iii) on the date of delivery by a reputable express delivery service, or (iv) when delivered in person.

17. Governing Law; Waiver of Jury Trial; Exclusive Forum and Jurisdiction:

These Standard Terms and Conditions and the Order for Work shall be governed by and interpreted solely in accordance with the laws of the State of Texas, U.S.A., without giving effect to any conflict of law rules. Likewise, **in the event of any dispute, claim or controversy arising out of or relating to this Agreement or the breach, termination, enforcement, interpretation or validity thereof and/or the Parties' relationship arising therefrom, the Parties agree first to try in good faith to settle the dispute by mediation and any applicable statute of limitations shall be tolled until ten (10) days after the mediation has concluded. If the matter is not resolved through mediation within thirty (30) days of serving notice of intent to mediate, then the parties shall submit their dispute to binding arbitration before one arbitrator. The mediation and arbitration shall be held in Houston, Texas in proceedings administered by and before, and in accordance with, the rules of, the American Arbitration Association. Judgment on the arbitrator's award may be entered by and in any Court having jurisdiction thereof. Any monetary award issued by the arbitrator shall be payable in U.S. Dollars. The arbitrators are not empowered to award consequential, indirect, special, punitive, or exemplary damages, and each Party hereby irrevocably waives any damages in excess of actual damages. In addition to the rights and remedies provided herein, the parties may seek injunctive and other provisional emergency relief from a Court in aid of arbitration or mediation and any such Court action shall be brought exclusively before a State Court located in Harris County, Texas or the United States District Court for the Southern District of Texas located in Harris County, Texas and each party irrevocably consents to the exclusive jurisdiction, and waives any objection to the venue, of said Court. Each party consents to service of process in the commencement of any action, mediation or arbitration proceeding by overnight mail delivery service with an additional copy sent by first-class mail, postage pre-paid, to the parties' respective addresses as provided in this Agreement.**

18. Attorneys' Fees: In the event of any action or suit based upon or arising out of any alleged breach by any Party of any representation, warranty, or agreement in the Order for Work or these Standard Terms and Conditions, the prevailing Party shall be entitled to recover reasonable attorneys' fees and other costs of such action or suit from the other Party.

19. Section Headings, Construction: The headings of Sections in these Standard Terms and Conditions are provided for convenience only and will not affect its construction or interpretation. All references to "Section" or "Sections" refer to the corresponding Section or Sections of these Standard Terms and Condition. The Parties have been given an opportunity to negotiate these Standard Terms and Conditions. In the event an ambiguity or question of intent or interpretation arises, these Standard Terms and Conditions shall be construed as if drafted jointly by the Parties and no presumption or burden of proof shall arise favoring or disfavoring any party by virtue of the authorship of any of the provisions of these Standard Terms and Conditions.

20. Severability: If any term of these Standard Terms and Conditions or the Order for Work is to any extent illegal, otherwise invalid, or incapable of being enforced, such term shall be excluded to the extent of such invalidity or unenforceability; all other terms hereof shall remain in full force and effect; and,

to the extent permitted and possible, the invalid or unenforceable term shall be deemed replaced by a term that is valid and enforceable and that comes closest to expressing the intention of such invalid or unenforceable term. If application of this Severability provision should materially and adversely affect the economic substance of the transactions contemplated hereby, the Party adversely impacted shall be entitled to compensation for such adverse impact, provided the reason for the invalidity or unenforceability of a term is not due to serious misconduct by the Party seeking such compensation.



Proposal for:

FIRED HEATER

THM P25-1204 REV03
Reset HMO 250088

Date Submitted

Jan. 28, 2026

Bid Validity:
30 days

Prepared for:

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About Us

THM makes the best quality heaters for the midstream industry and beyond that gets your project running on time and stays on-line longer. Our customer service is second to none.

Servant's Heart



We believe that we were created to serve. We are servants to the customer. We will do anything ethical to delight them. We are servants to our coworkers, always looking for ways to help. And we are servants to our community, working with organizations and people that help create a more flourishing Tulsa and beyond.

On Time Delivery



We will do everything within our power to deliver the project on time. Our company is set up and organized with systems and resources dedicated to the goal of delivering every project on time.

Engineered for You



Each and every heater that we build is custom designed for its particular purpose. While we have pre-engineered certain aspects of the heater design, every heater goes through a custom design process that creates a one-off system for your set of conditions and specifications.

Whether you need to purchase a new hot oil or regen gas heater, Tulsa Heaters Midstream strives to be the “best choice” for purchasers in the oil and gas industry. All of our heater and thermal oxidizer product lines have been developed with your long-term needs in mind.



Our Standards

THM's proposal is based on the data provided with the inquiry, except where noted. Unless superseded by the requisition, the THM proposal is in accordance with the following standards:

Design Standards

API	Std 530, Std 560 (with deviations), RP 535 (with deviations)
AISC	Manual of Steel Construction
ANSI/ASCE	7-10
ASME	B16.5, B16.9, B16.11, B31.3, B36.10, Boiler & Pressure Vessel Code - Sec. I, Sec. VIII, Sec. IX
ASTM	A193, A194, A297, A351, A384, A385, C64, C155, C332, E186
NFPA	87, 70 (2023)
ICBO	Universal Building Code V2
NEC	Electrical Code Book 2014 (Article 500 – Hazardous Locations)

Manufacturing Standards

ASTM	Coil: A106B, A161, A200, A213, A312, A335, B407 Fittings: A105, A182, A216, A217, A234, A351, A403, B366 Supports: A216, A217, A240, A283, A297, A447, A560, E165, E433, E446 Refractory: C27, C155, C401, C612 L&Ps: A123, A143, A153, A384, A385 Casing: A36, A283C Structure: A36
AWS	D1.1 Structural Welding Code
SSPC	SP-3, SP-5, SP-6, SP-10



Modular Solutions

THM's standard practice is to maximize shop fabrication and assembly. Using modular designs helps to minimize field erection time and labor. The size and weight of each module will be maximized (up to the purchaser's shipping constraints) to minimize the quantity of modules. Each module also has lifting lugs suitable for safe handling and erection*.

*Spreader beams not included



Scope of Supply

Activities

This proposal provides for the following global activities:

• Process Design	• Expediting
• Mechanical & Structural Design	• Quality Assurance/Quality Control
• Project Management	• Document Control
• Basic (GA) design drawings & documentation	• Shipping Preparation
• Fabrication (detail) drawings & documentation	• Shipping to Site/Port (optional)
• Component and materials procurement	• Site Supervision (optional)
• Shop fabrication and module assembly	• Commissioning and Start-up (optional)

Documentation

The above activities will typically yield the following relevant documentation:

Data Sheets: fired heater, etc	General Arrangement Drawings: casing, structure, refractory, coil, components
Calculations: structural, coil wall, foundation loading, others as needed	Procedures (if applicable): NDE, welding, PWHT, erection procedures
Performance Curves: burners, fans, etc	Final Data Book: all project data and information

Materials and Services

The following items are not included in our base offering scope of supply:

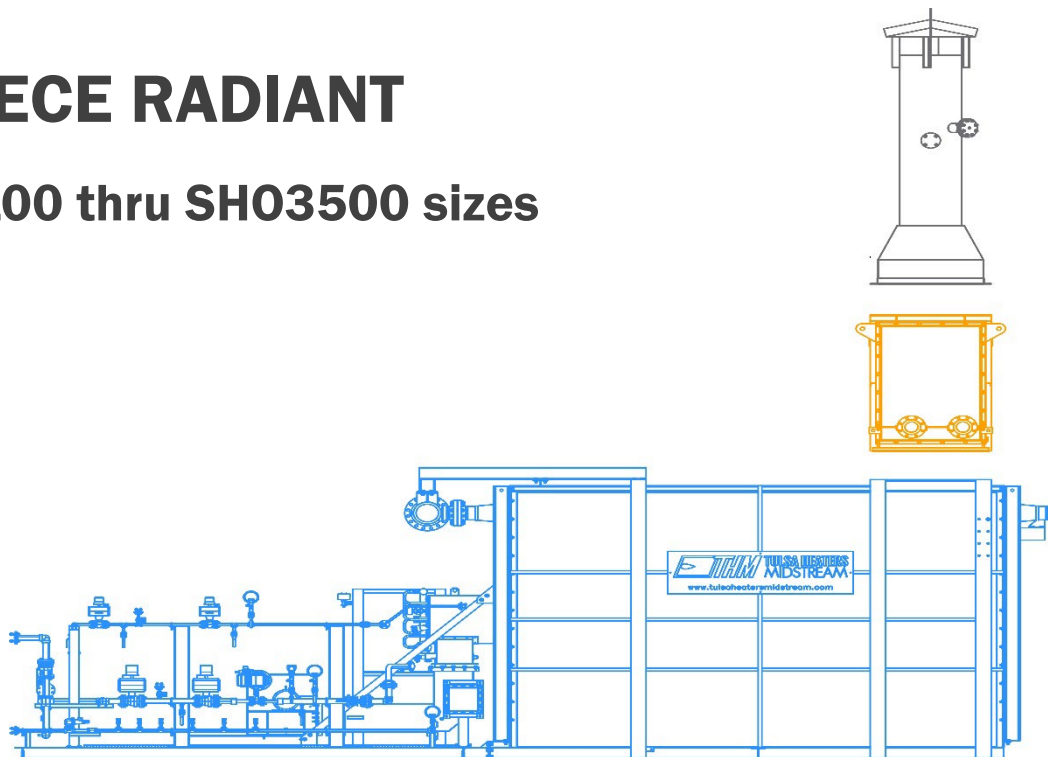
• Foundation/pier design and related structural engineering	• Start-up/Commissioning supervision and/or assistance (although mandatory with BMS supply).
• Interconnecting piping and wiring – design or materials	• Design, analysis, and/or review of any related component not expressly written into our scope of supply
• Field erection/supervision of heater and accessories	



Heater Assembly

1-PIECE RADIANT

SH0100 thru SH03500 sizes



Radiant Section

Complete radiant section, including casing/structure, refractory, coil supports, and radiant coil will be assembled as a single module for shipment. The BMS and fuel train, along with the burner and blower, will also be installed prior to shipment.

Convection Section

Complete convection section, including casing/structure, refractory, coil supports, and convection coil will be assembled as a single module for shipment. To be bolted to radiant section.

Stack Section

Complete breeching/transition and stack section assembled and shipped as a single piece. To be bolted to convection section.

Additional Items

Additional items included in the THM package that will ship loose for installation in the field:

- Coil crossover piping
- Heater instruments
- Flame scanner
- Fuel train instruments

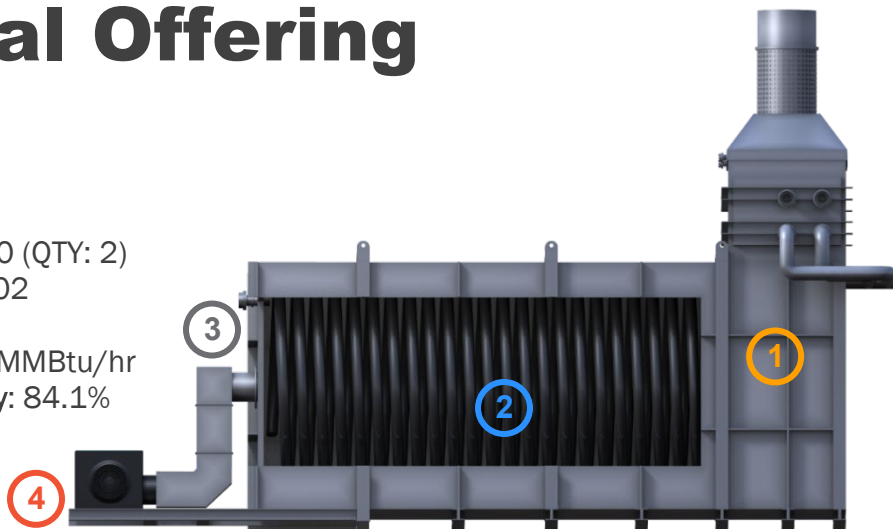


Technical Offering

HEATER

THM Model: SH03500 (QTY: 2)
Heater Tag: H-101/102

Absorbed Duty: 33.5 MMBtu/hr
Guaranteed Efficiency: 84.1%



1 Heater & Casing

Construction Material: Carbon Steel

Refractory: Ceramic fiber blanket

Paint: THM standard

2 Coil

Radiant Section

- Style/Passes: 2-pass helical
- Material: SA-106 Gr. B
- Size/Schedule: 6" SCH 40

Convection Section

- Style/Passes: 2-pass serpentine
- Material: SA-106 Gr. B
- Size/Schedule: 6" SCH 40

Manifolds

- Inlet manifold included: Yes
- Outlet manifold included: Yes

3 Burner

Vendor: Callidus Technologies

Model: CUBL-10W-HC-HZ

Emissions Guarantees

- NOx – 30 ppmv*
- CO – 50 ppmv*

*Guarantees made for 50-100% of design combustion with 15% excess air and a firebox temperature >1300 °F

4 Blower

Vendor: Chicago Blower (or equal)

Motor Rating: 30 HP, 1800 RPM

(to be confirmed at time of order)

Motor/Air Control: VFD (supply by others)

Noise Guarantee

- 85 dBA @ 3 feet from heater
(based on a free field)



Technical Offering

BURNER MANAGEMENT SYSTEM (BMS)

Heater Tag: H-101/102 **THM Model:** BMS5500 (QTY:2)

Area Classification: Class I, Div. II, Groups C&D

System Philosophy

The system permissives and limits must first be satisfied to start the system. These include:

Limits:

- High and low fuel pressures
- Process high temperature
- Stack high temperature
- Low low process flow (instrument by others)
- Low low oil system (when applicable)
- Loss of combustion air
- Blower motor run status
- Flame failure
- Low O2 alarm (if applicable)
- Fuel valves proved closed for purge cycle

Permissives (from DCS):

- Remote ESD
- Remote heater run/stop

When the above conditions are satisfied, the following start-up sequence is followed:

- Purge using forced draft blower
- Pilot ignition and proof of flame
- Main burner ignition and proof of flame
- Pilot interrupted, proof of main flame
- Burner modulation to full fire

Any time a system limit is not satisfied, the fuel valves are safely closed, and the system shut down. The process will begin again with a purge cycle upon restart.

Combustion Control Panel

Our control panel is skid mounted for easy access

- Rating: NEMA 4 (air purged)
- 120 VAC Supply (external disconnect by others – if required)
- BMS Controller: Honeywell Slate (fuel/air control plus safety)

Pipe/Fuel Train

Our fuel train is pre-piped for easy installation

- NFPA 87 compliant
- Inlet pressure regulator (pressure not to exceed 100 psig)
- Double block gas train for Primary Gas
- Double block gas train for Pilot Gas
- Modulating Fuel Control Valve
- Strainer, manual block valves, pressure gauges
- Low/high pressure transmitters

Additional Items

Additional control/instrument items not located on skid

- Thermocouples (process high limit, process control, stack high limit)
- Ignition transformer mounted in panel
- UV self-check scanner

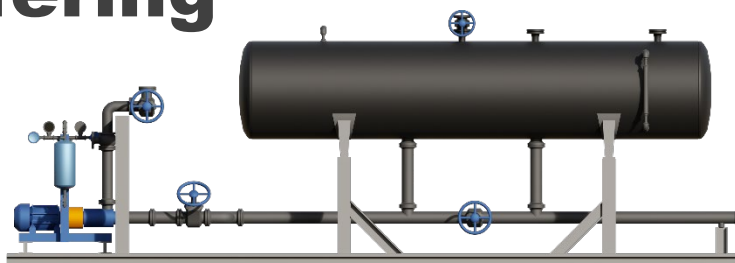


Technical Offering

PUMP SKID

Vessel Tag: V-101 (Common)

THM Model: SHOSCUSTOM



Pumps

Quantity: 3 ANSI style centrifugal pumps

Motor Rating: 125 HP

Capacity (each): 50%

Seals: Tandem Mechanical

Cooling Method: Air, with Plan 21 and Plan 52

Expansion Tank

ASME code stamp: Yes (RT-3, with hydro-static test)

NB stamp: Yes

Sized for: 7,500 gallons

Design: 150 psig @ 500 °F (-20 °F MDMT)

Manway included: Yes

PSV included: Yes

Level Gauge: Reflex type with isolation valves

Blanket gas system with supply and relief regulators

Tank low level switch

Slip Stream Filter

Included: Yes

Capacity: 20% of total flow

Design: 150 psig @ 500 °F (-20 °F MDMT)

Flow control valve: manual gate

Pressure Measurement: differential pressure gauge (DPI)

FE/FIT included: No

PSV included: Yes

Additional Items

Bypass control valve: No (optional pricing included)

External insulation: No (optional pricing included)

Additional Valves/Instruments

Two (2) pressure gauges for each pump

One (1) check valve for each pump

One (1) basket strainer for each pump

Piping designed to meet ASME and ANSI codes

(see preliminary P&ID in Appendices for quoted scope)



Scope of Supply

ITEM	SUPPLIED BY		NOTES
	THM	OTHERS	
HEATER PACKAGE			
HEATER	X		
BURNER	X		
REFRACTORY & ANCHORS	X		
LADDER & PLATFORMS		X	OPTIONAL
SINGLE POINT INLET/OUTLET PROCESS MANIFOLD(S)	X		
INTERFACE GASKETS	X		
EXTERNAL INSULATION/JACKETING OF PIPING		X	
FOUNDATION ANCHOR BOLTS		X	
HEATER PRESSURE SAFETY VALVE (PSV)		X	
CONTROLS (BMS) PACKAGE			
COMBUSTION AIR BLOWER (SKID MOUNTED)	X		
BLOWER DUCTING (TO BURNER)	X		
SKIDDED BURNER MANAGEMENT SYSTEM (BMS) W/ CONTROL PANEL AND FUEL TRAIN	X		
VARIABLE FREQUENCY DRIVE (VFD) FOR COMBUSTION AIR BLOWER		X	
HEATER INSTRUMENTATION (SEE P&ID IN APPENDICES)	X		
HOT OIL CIRCULATION PACKAGE			
PUMP SKID	X		
PUMP(S)	X		
PUMP CONTROLS (START/STOP/SPEED)		X	
VARIABLE FREQUENCY DRIVE (VFD) FOR PUMPS		X	
MOTOR STARTER (FOR PUMPS)		X	
EXPANSION TANK	X		
EXPANSION TANK BLANKETING SYSTEM	X		
EXPANSION TANK PRESSURE SAFETY VALVE (PSV)	X		
SLIP STREAM FILTER & ASSOCIATED VALVES/INSTRUMENTS	X		
EXTERNAL INSULATION/JACKETING OF PUMP SKID		X	OPTIONAL
BYPASS CONTROL VALVE		X	OPTIONAL
HOT OIL STORAGE TANK		X	
ADDITIONAL ITEMS/SERVICES			
SPARE PARTS			OPTIONAL
AREA LIGHTING		X	
INTERCONNECTING PIPING BETWEEN PUMP SKID & HEATER		X	
INTERCONNECTING WIRING/CONDUIT BETWEEN PUMP SKID/HEATER/BMS		X	
DATABOOKS W/ MTR'S, WELD MAPS, VENDOR LITERATURE (DIGITAL COPY ONLY)	X		
INSTALLATION OF EQUIPMENT		X	
START-UP & COMMISSIONING OF EQUIPMENT	X*		*AT DAILY RATES



Exceptions & Clarifications

This proposal meets the RFQ with the following exceptions/clarifications:

Technical

The following exceptions and clarifications are taken with respect to the technical scope of supply:

- Some process conditions estimated based on information provided. To be confirmed before detail design.
- We have provided a BMS to meet Class 1, Division 2, Groups C&D. There would be a cost deduct if you would accept an unclassified system.
- We have included three (3) ANSI style hot oil pumps with tandem mechanical seals and Plan 21 and Plan 52 seal flush cooling. If seal cooling and plans are not required, a deduct can be provided.
- We have taken slightly more pressure drop than noted as allowable. Additional pressure drop taken into consideration with pump design.
- THM takes exception to the requirement that the external temperature cannot reach 140°F. We have quoted our standard insulation package.
- We have not included piping between the pump skid and heater in our scope of supply.
- We have not included wiring/conduit between pump skid/heater/BMS.
- We have provided optional pricing for a bypass control valve on the pump skid as well as external insulation for the pump skid. Bypass control valve sizing estimated at this time. Sizing to be confirmed during detail design.

Commercial

The following exceptions and clarifications are taken with respect to the commercial terms and conditions:

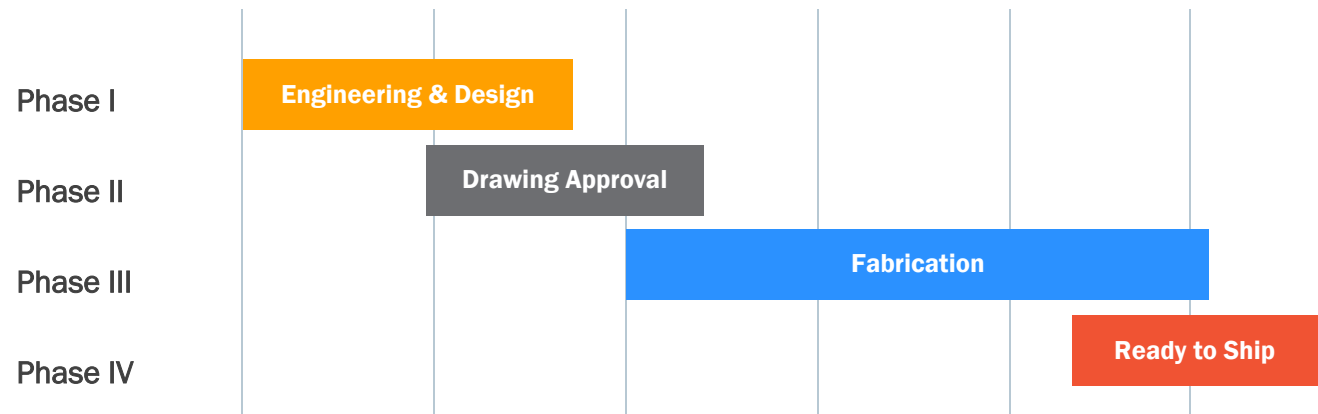
- THM proposal is based on the assumption that mutually agreeable terms and conditions can be met, or previously agreed upon terms can be used.



Project Schedule & Timeline

While THM uses pre-engineered components to help with speed of delivery, we also recognize that each project is unique. Every project will be assigned a Project Manager to ensure that all of the project needs are met, and equipment is delivered on time.

Overview



Detailed Schedule

Milestone	Milestone Schedule	Cumulative Schedule
 Issue GA & Structural Packages	4 weeks ARO	4 weeks ARO
 Issue Electrical Schematic Package	6 weeks ARO	6 weeks ARO
 Customer Drawing Review	2 weeks	2 weeks
 Initial Shipment from Fabrication Shop	20-22 weeks ARAD	28-30 weeks ARO



Project Budget

Base Offering

SH03500 Package Heater (H-101)	
BMS5500 Burner Management Skid Package	Included
SH03500 Package Heater (H-102)	
BMS5500 Burner Management Skid Package	Included
SHOSCUSTOM Common Pump Skid and Expansion Drum Package (V-101)	
Total	

Options

Ladders & Platforms for SH03500 Package Heater (each)	
Bypass Control Valve for SHOSCUSTOM Pump Skid	
External Insulation for SHOSCUSTOM Pump Skid and Expansion Drum (2" calcium silicate)	

DID YOU KNOW?

The API 560 heater standards provide guidance and recommendations on how far apart the coils should be spaced within the heater to provide safe and efficient heating to the process fluid. Check out this video to learn more about why this is important.



Conditions of Sale

The following are THM's standard terms and conditions of sale. Should THM be favored with a contract for this project, we are confident that mutually agreeable terms can be established using these conditions as a basis.

Commercial Notes

- Pricing does not include any taxes, duties, VATs, and/or shipping charges, except where stated to the contrary.
- Unless stated otherwise, the point of manufacture is in the Tulsa, OK metro area.
- Modules fabricated in the USA will have maximum domestic content. However, we reserve the right to use imported materials on a limited basis.
- Modules fabricated outside the USA will have locally sourced structural steel, plate steel, and refractories (as available).
- Burner assemblies may contain some components that are not of domestic supply. Also, burner castings are typically of Chinese origin.
- Unless otherwise stated, THM will not submit weld maps, weld procedure qualifications, or weld specifications for burners.
- The market for alloy coil materials is considered volatile, and sudden price increases could occur. The prices in this proposal (if an alloy coil is proposed) are based on estimates of said materials at current market rates. Pricing must be confirmed at time of order.

Acceptance

Contracts arising out of this proposal shall not be binding upon THM until accepted and acknowledged by an authorized officer of THM or a designee.

Project Cancellation

Except when specifically voided or altered by the Contract, the following standard cancellation schedule shall be applicable during the course of the project:

- | | |
|---------------------------------|-----------------|
| • Issue GA Package | 25% of PO value |
| • Purchase coil materials | 50% of PO value |
| • Purchase casing materials | 80% of PO value |
| • Begin refractory installation | 90% of PO value |
| • Final NDE | 95% of PO value |

Title – Risk of Loss

Except where specifically stated to the contrary, THM's products are offered FOB Fab Shop, and as such, title to and risk in all goods sold pass to Customer when said products are loaded on Customer's trucks, or stored at shop, per Customer's request.

Progress Payment Terms

THM's proposal is based on the application of the following measurable milestone payments:

- | | |
|-------------------------------------|-----------------|
| • Issue GA Package | 25% of PO value |
| • Receipt of tubes and return bends | 50% of PO value |
| • Notification of Ready to Ship | 25% of PO value |

All payments are set up on a NET 30-day basis.

Please note that THM will charge interest @ 1.50% of the invoice value per month to all past due accounts.

Warranty

THM's warranty is 18 months after shipment or 12 months after start-up, whichever occurs first. THM's warranty specifically excludes damages or failures caused by factors outside of THM's span of control, such as improper design by Others of adjoining systems, the improper operation of the said heater, or the intentional misapplication of same. Field evaluations of the proposed system(s) shall be performed at design conditions (as documented by THM's data sheets) and in strict accordance with the test methodologies set forth in ISO13705/API Standard 560. Emissions testing will be per the EPA or state regulator requirements. Repair or replacement of any item(s) shall be to the Point of Sale specified in the contract. THM is not responsible for any and all labor, equipment, and/or material costs for removal or reinstallation of parts.



Appendices

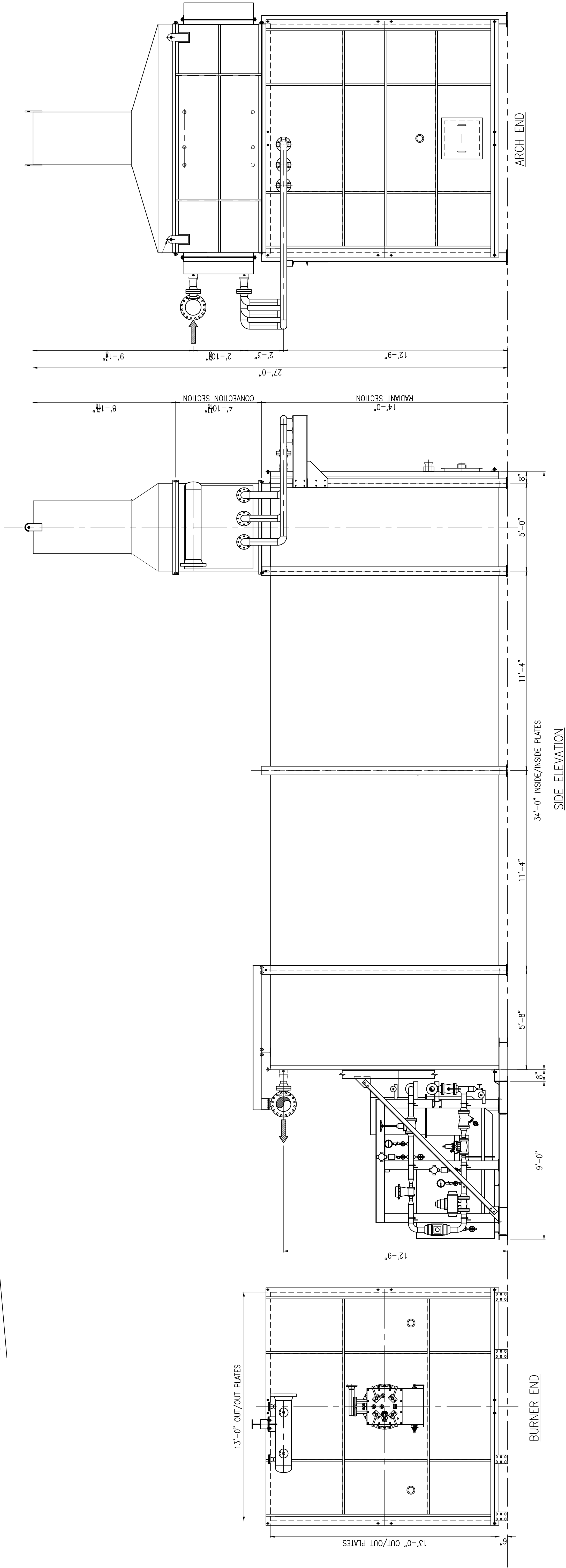
Additional Attachments

The following attachments are included to help supplement the above proposal.

- Reference GA drawing
- BMS P&ID
- Pump Skid P&ID
- Heater datasheets



PRELIMINARY



NOTE: ALL DIMENSIONS ARE APPROXIMATE AND SUBJECT TO CHANGE

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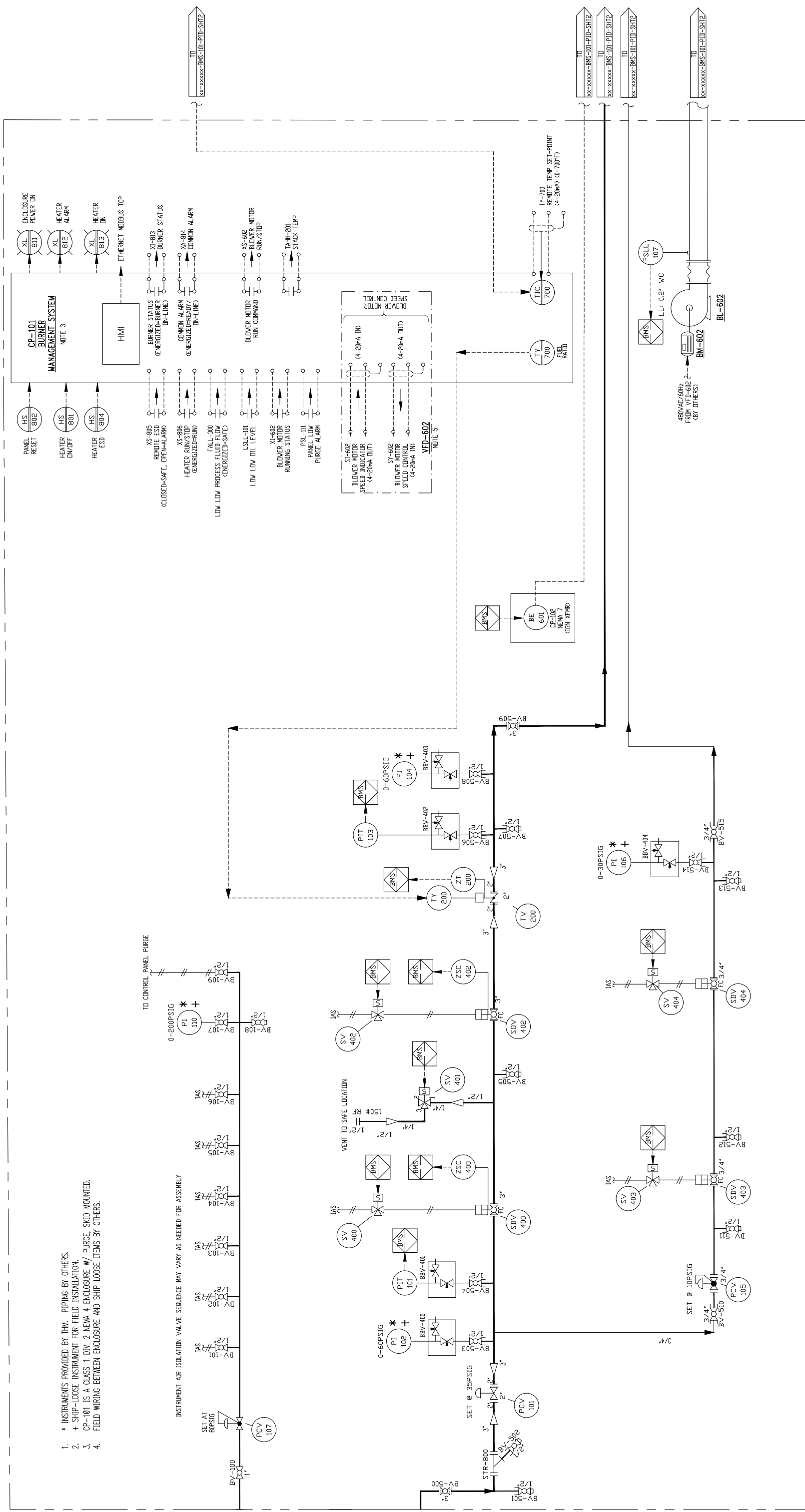
Customer:

LOCATION
UNIT
SERVICE
EQUIPMENT No.
P.O. No.

Revision Description

Rev. Date By

Title SHO 3500 PROPOSAL ARRANGMENT	
Drawn By	Date
Checked By	Date
Approved By	Certified By
Job No.: SHO-3500	
Drawing No.	
Rev.	
SHO-3500A P0	



DO NOT SCALE DRAWING

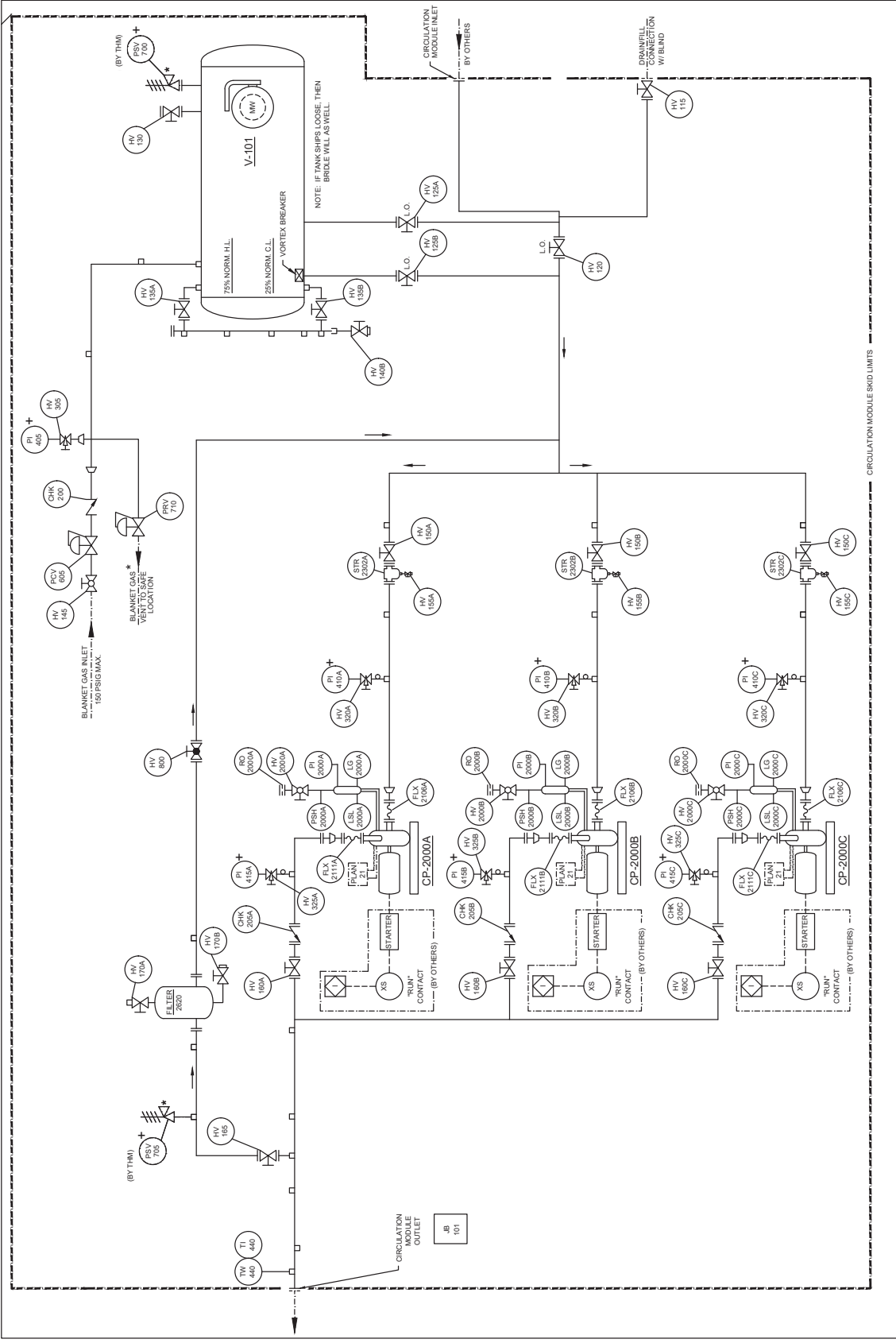
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THM TUSA HEATERS MIDSTREAM

Rev

Drawn By

Checked By

Approved By

Date

Job No.

Drawing No.

Customer

LOCATION

SERVICE

INSTRUMENT

P.O. No.

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LEGEND

ELECTRICAL

PNEUMATIC

INSTRUMENT AIR SUPPLY

HEATER CONTROL

PANEL MOUNTED INSTRUMENT

SHIP LOOSE FOR FIELD INSTALLATION

SKID LIMITS

BY OTHERS

VENT TO SAFE LOCATION

INSTRUMENT BY OTHERS

COOLING COIL

1				
2	Owner:	TBD	Owner Ref.:	H-101/102
3	Purchaser:	Reset	Purchaser Ref.:	TBD
4	Manufacturer:	Tulsa Heaters Midstream, LLC	THM Ref.:	P25-1204
5	Service:	Hot Oil Heater	Project:	Hot Oil Heater
6	Quantity:	2	Location:	TBD
7	SHO Duty:	33.50 MMBTU/ hr	SHO Model:	SHO3500
8	BMS Release:	42.79 MMBTU/ hr	BMS Model:	BMS5500
9	SHOS Flow:	3,310 USgpm @ 190 ft TDH	SHOS.Model:	SHOSCUSTOM
10				
11	Rev			
12	PROCESS DESIGN CONDITIONS			
13				
14	Heater Section	---	Radiant / Convection	Radiant / Convection
15	Operating Case	---	Design	
16	Service	---	Hot Oil Heater	
17	Heat Absorption (R/C)	MMBTU/ hr	22.74 / 10.76	
18	Process Fluid	---	Chemtherm 550	
19	Process Mass Flow Rate, Total	Lb/ hr	563,973	
20	Process Bulk Velocity (calc. R/C)	ft/ s	8 / 8	
21	Process Mass Velocity (calc. R/C)	Lb/ s ft2	390 / 390	
22	Coking Allowance (dP calcs)	in		
23	Pressure Drop, Clean (allow. / calc.)	psi	15 / 17	
24	Pressure Drop, Fouled (allow. / calc.)	psi		
25	Average Heat Flux (allowable)	BTU/ hr ft2	13,500	
26	Average Heat Flux (calculated)	BTU/ hr ft2	11,430	
27	Maximum Heat Flux (allowable)	BTU/ hr ft2		
28	Maximum Heat Flux (calc. R/C)	BTU/ hr ft2	21,000 / 28,600	
29	Fouling Factor, Internal	hr ft2 °F/ BTU	0.002	
30	Corrosion or Erosion Characteristics	---		
31	Max. Film Temperature (allow. / calc.)	°F	640 / 513	
32				
33	Inlet Conditions:			
34	Temperature	°F	300	
35	Pressure	psig	77	
36	Mass Flow Rate, Liquid	Lb/ hr	563,973	
37	Mass Flow Rate, Vapor	Lb/ hr	0	
38	Weight Percent, Liquid / Vapor	wt%	100% / 0%	
39	Density, Liquid / Vapor	Lb/ ft3	50.99 / 0.00	
40	Molecular Weight, Liquid / Vapor	Lb/ Lbmole	--- / 0.0	
41	Viscosity, Liquid / Vapor	cp	1.9668 / 0.000	
42	Specific Heat, Liquid / Vapor	BTU/ Lb °F	0.57 / 0.000	
43	Thermal Conductivity, Liq./Vap.	BTU/hr ft °F	0.07011 / 0.000	
44				
45	Outlet Conditions:			
46	Temperature	°F	400	
47	Pressure	psig	60	
48	Mass Flow Rate, Liquid	Lb/ hr	563,973	
49	Mass Flow Rate, Vapor	Lb/ hr	0	
50	Weight Percent, Liquid / Vapor	wt%	100% / 0%	
51	Density, Liquid / Vapor	Lb/ ft3	48.82 / 0.00	
52	Molecular Weight, Liquid / Vapor	Lb/ Lbmole	--- / 0.0	
53	Viscosity, Liquid / Vapor	cp	1.001 / 0.000	
54	Specific Heat, Liquid / Vapor	BTU/ Lb °F	0.618 / 0.000	
55	Thermal Conductivity, Liq./Vap.	BTU/hr ft °F	0.068 / 0.000	
56				
57				
58				
59				
60	D	28-Jan-26	Updated emissions	MMB
61	C	8-Jan-26	(2) 50% Heaters - 67 MMBtu/hr	MMB
62	B	17-Dec-25	(2) 50% Heaters Option	MMB
63	A	11-Dec-25	Issued with Proposal	MMB
64	revision	date	description	by chk'd appv'd

SHO = Superior Quality, Flexibility, Dependability & Modularity

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HEATER DATA SHEET

AMERICAN ENGINEERING SYSTEM of UNITS

P25-1204-HTRDS Pg 1 of 6

COMBUSTION DESIGN CONDITIONS

Overall Performance:

Operating Case	---	Design			
Service	---	Hot Oil Heater			
Excess Air	mol%	15.0%			
Calculated Heat Release (LHV)	MMBTU/ hr	38.90			
Guaranteed Efficiency	HR%	84.1%			
Calculated Efficiency	HR%	86.1%			
Radiation Loss	HR%	2.00%			
Flow Rate, Combustion Gen./ Imp.	Lb/ hr	37,913			
Flue Gas Temp. Leaving (R/C)	°F	1,471 / 517			
Flue Gas Mass Velocity	Lb/ sec ft2	0.472			

Fuel(s) Data:

Gas 1	Gas 2	Gas 3	Design	Burner Design:	
Mol.Wt.	Mol.Wt.	Mol.Wt.	Fuel Oil	OEM	---
LHV BTU/ scf	927		---	Type	--- Callidus Technologies, LLC
LHV BTU/ Lb	20,483			Quantities	--- Enhanced IFGR
P @ Burner psig	150			Model No.	--- 1 ULTRA Low NOx
T @ Burner °F	100			Windbox	--- CUBL-10W-HC-HZ Cylindrical
MW Lb/ Lbmole	17.18		---	Location	--- yes ...
Flow @ design lb/hr	1,899			EndWall Center ...	--- Horizontally Fired
Flow @ design scfh	41,947			Pilot Design:	
Atomizing Media	---			Type / Model	Self-Inspiring / by O.E.M.
Atom. Media P & T	---			Ignition	--- Electric requires elec.ign.system
				Heat Release	--- > 350000 BTU/ hr on ... Gas 1

Components:

N	wt%	---			Burner Performance:	
S	wt%	---			Minimum Heat Release	MMBTU/ hr 8.56
Ash	wt%	---			Design Heat Release	MMBTU/ hr 38.90
Ni	ppm	---			Maximum Heat Release	MMBTU/ hr 42.79
Va	ppm	---			Burner Turndown	Max:Min 5.00
Na	ppm	---			Volumetric Ht. Release	BTU/ hr ft3 7,737
Fe	ppm	---			Pressure @ Arch	inH2O 0.80
					Pressure @ Burner	inH2O 6.69
H2	mol%	0.0%	---		Combustion Air T @ Burner	°F 60
O2	mol%	0.0%	---		Flue Gas T @ Burner	°F 1,280

N2 + Ar

CO	mol%	0.0%	---		Guaranteed Emissions:	
CO2	mol%	0.2%	---		Basis of Guarantee	---
CH4	mol%	92.2%	---		NOx Emissions	Lb/MMBTU 0.040 30 ppm
C2H6	mol%	4.8%	---		SOx Emissions	Lb/MMBTU no quote
C2H4	mol%	0.0%	---		CO Emissions	Lb/MMBTU 0.041 50 ppm
C3H8	mol%	0.4%	---		VOC Emissions	Lb/MMBTU 0.019 15 ppm
C3H6	mol%	0.0%	---		UHC Emissions	Lb/MMBTU 0.007 15 ppm
C4H10	mol%	0.0%	---		SPM10 Emissions	Lb/MMBTU 0.013 15 ppm
C4H8	mol%	0.0%	---		Noise Emissions	dBA @ 3ft 85
C5H12	mol%	0.0%	---			
C5H10	mol%	0.0%	---			

C6+

H2S	ppmv	0.0%	---		Net Flame Clearances:	
SO2	mol%	0.0%	---		Est. Flame Size	approx. 24.5 ft L x 5 ft Diameter
NH3	mol%	0.0%	---		Hor Clearance	3 ft NET Tube Clearance
H2O	mol%	0.0%	---		Vert. Clearance	3 ft NET Tube Clearance
spare	mol%	0.0%	---		Axial Clearance	8.67 ft NET Refractory Clearance (to Target hot face)

Blower/Fan Performance:

Volumetric Flow	acfm	9,000	
Rated Power	HP	30	
Fan Speed	RPM	1,800	
Sound Pressure	dBA	< 85	
Area Classification	NEC	Class I, Div. II, Groups C&D	

Nominal Flame Clearances:

from burner CL ...	Vertical	Horizontal
to Tube CL, API	ft 18.30	12.20
to Tube CL, calc.	ft 5.50	5.50
to Refrac., calc.	ft n/a	33.17



AMERICAN ENGINEERING SYSTEM of UNITS

HEATER DATA SHEET
P25-1204-HTRDS

PRESSURE PARTS DESIGN

Coil Design:

		RADIANT	SHIELD	CONVECTION
Service		Hot Oil Heater	Hot Oil Heater	Hot Oil Heater
Design Basis for Tube Temperature		API 530	API 530	API 530
Design Basis for Tube Wall Thickness		ASME Sec. VIII-1	ASME Sec. VIII-1	ASME Sec. VIII-1
Design Life	hr	100,000	100,000	100,000
Design Pressure (elastic / rupture)	psig	150 /	150 /	150 /
Design Fluid Temperature	°F	400	400	400
Design Temperature Allowance	°F	25	25	25
Design Corrosion Allowance (tubes/fittings)	in	0.063 / 0.063	0.063 / 0.063	0.063 / 0.063

Maximum Tube Temperature (clean)	°F	533		
Maximum Tube Temperature (fouled)	°F	580	523	631
Design Tube Temperature	°F	605	656	656
Inside Film Coefficient	BTU/ hr ft ²	202	159	147
Weld Inspection	RT or Other	100 of 100%	100 of 100%	100 of 100%
Weld Heat Treatment	s.rel., t.stab. or none	None	None	None
Hydrostatic Test Pressure	psig	per API	per API	per API

Coil Arrangement:

Coil Type	---	Horizontal	Horizontal	Horizontal
Tube Material (pipe or tube spec)	ASTM	SA106GrB	SA106GrB	SA106GrB
Supplementary Mfg Requirements	ASTM	None	None	None
Tube Outside Diameter	in	6.625	6.625	6.625
Tube Wall Thickness (aw / mw)	in	0.280 / 0.245	0.280 / 0.245	0.280 / 0.245
Number of Cells (radiant or convection)	---	1	1	1
Number of Flow Passes (total / cell)	---	2 / 2	2 / 2	2 / 2
Number of Tubes per Row (total / cell)	---	4 / 4	4 / 4	4 / 4
Overall Tube (1 turn in radiant) Length	ft	34.55	14.04	14.04
Effective Tube Length / Helix Diameter	ft	34.55 / 11.00	12.46	12.46
Number of Turns or Tubes (total / pass)		34.0 / 17.0	4.0 / 4.0	0.0 / 0.0
Total Exposed Surface	ft ²	1,990	86	0
Number of Ext.Surf. Tubes (total / cell)	---	0 / 0.0	0 / 0.0	24 / 24.0
Total Exposed Surface	ft ²	0	0	5,684
Tube Spacing (horiz. / tube centers)	in	--- / 11.25	12.00 / 12.00	12.00 / 12.00
Tube Spacing (horiz. to refractory)	in	9.00	6.00	6.00
Coil Fluid Volume	USgal	1781	92	551

Coil Fittings:

Fitting Type	---	Hot Oil Heater	Hot Oil Heater	Hot Oil Heater
Fitting Material	ASTM	SR 90° Elbows	SR 180° U-Bends	SR 180° U-Bends
Supplementary Mfg Requirements	ASTM	SA234 WPB	SA234 WPB	SA234 WPB
Fitting Outside Diameter	in	6.625	6.625	6.625
Fitting Wall Thickness (aw / mw)	in	0.280 / 0.245	0.280 / 0.245	0.280 / 0.245
Fitting Location	internal or external	Internal	External	External
Tube Attachment	welded or rolled	Welded	Welded	Welded

Coil Terminals:

Terminal Type	beveled or flanged	Outlet		Inlet
Flange Material	ASTM	Flanged		Flanged
Supplementary Mfg Requirements	ASTM	SA105N		SA105N
Flange Size and Rating	NPS/ ASME	None		None
Flange Type	RFWN or RTJ	6" / 300#		6" / 300#
Location	---	RFWN		RFWN
		Burner Endwall		Terminal End

Extended Surface:

Service	---	CONVECTION	CONVECTION	CONVECTION
Fin or Stud Row Number	starting @ bottom	Hot Oil Heater	Hot Oil Heater	Hot Oil Heater
Ext. Surface Type	seg.fins, solid fins, studs	No.1 / No.2	No.3-6 /	/
Fin/Stud Material	---	Segmented	Segmented	
Fin/Stud Height	in	C.S. / C.S.	C.S. /	/
Fin/Stud Thickness	in	0.50 / 0.75	1.00 /	/
Fin/Stud Density	fin/ in	0.11 / 0.11	0.11 /	/
		5.00 / 5.00	5.00 /	/



AMERICAN ENGINEERING SYSTEM of UNITS

HEATER DATA SHEET
P25-1204-HTRDS

Page 3 of 6

PRESSURE PARTS DESIGN (continued)

1					
2					
3	Crossovers:		RADIANT	SHIELD	CONVECTION
4	Type, location / connections	---	External	/ Flanged	None
5	Tube / Fittings Material	ASTM	SA106GrB	/ SA234 WPB	
6	Tube & Fitting OD / Thickness (aw)	in	6.625	/ 0.280	
7					
8	Inlet Manifold(s):	type			Simple LOG
9	Location	---			Top - Term. End
10	Design Basis for Manifold Thickness	---			ASME B31.3
11	Design Conditions (temp./press.)	°F/ psig			656 / 150
12	Pipe Material	ASTM			SA106GrB
13	Fittings Material	ASTM			SA234 WPB
14	Flange Material / Style	ASTM			SA105N/ RFWN
15	Outside Diameters, each Branch	in			12" NPS
16	Wall Thickness(es); aw or mw	in			SCH40 (0.406)
17	End Types (terminal/ dead)	beveled or flanged			Flanged / W.Cap
18	Manifold Terminal Type	NPS/ ASME			12" NPS / 300# Flg
19	Coil Connection Type	extrusion, olet, etc.			Weld-O-Let
20	Coil Terminal Type	NPS/ ASME			6" NPS / 300# Flg
21					
22	Outlet Manifold(s):	type	Simple LOG		
23	Location	---	Burner Endwall		
24	Design Basis for Manifold Thickness	---	ASME B31.3		
25	Design Conditions (temp./press.)	°F/ psig	605 / 150		
26	Pipe Material	ASTM	SA106GrB		
27	Fittings Material	ASTM	SA234 WPB		
28	Flange Material / Style	ASTM	SA105N / RFWN		
29	Outside Diameters, each Branch	in	12" NPS		
30	Wall Thickness(es); aw or mw	in	SCH40 (0.406)		
31	End Types (terminal/ dead)	beveled or flanged	Flanged / W.Cap		
32	Manifold Terminal Type	NPS/ ASME	12" NPS / 300# Flg		
33	Coil Connection Type	extrusion, olet, etc.	Weld-O-Let		
34	Coil Terminal Type	NPS/ ASME	6" NPS / 300# Flg		
35					

COIL & MANIFOLD SUPPORTS DESIGN

36					
37					
38					
39	Tube Supports:		RADIANT	SHIELD	CONVECTION
40	Service		Hot Oil Heater	Hot Oil Heater	Hot Oil Heater
41	Location	Top, Bottom, Ends	Bottom	Ends	Ends
42	Support Type	casting, tubesht, spring, etc.	SS Rail	Welded Tbsheets	Welded Tbsheets
43	Support Thicknesses	in	0.5"	0.375	0.375
44	Support Materials	ASTM	A240 T310	A36 CS	A36 CS
45	Support Temperatures (calc./ design)	°F / °F	899 / 1,080	617 / 770	617 / 770
46	TbSht Ferrules Thickness/Materials	in/ ASTM	---	14 ga. / 304 SS	14 ga. / 304 SS
47	Refractory & Anchor Materials & Types		none	per refrac. section	per refrac. section
48					
49	Intermediate Guides & Supports:		None	None	None
50	Location	---			
51	Guide/ Support Type	casting, spring, etc.			
52	Material	ASTM			
53	Spacing, average	ft			
54					
55	Tube Guides:	Top, Bottom, Ends	None	None	None
56	Material	ASTM			
57					
58	Manifold Supports:		Outlet Manifold		Inlet Manifold
59	Material	ASTM	A36		N/A
60	Materials Design & Supply	---	by THM		
61	Location	Top, Bottom, Ends	Burner Endwall		
62	Support Type	roller, shoe, spring, etc.	Simple Shelf		
63	Number of Supports	---	One (1)		
64					

CASING / REFRACTORY SYSTEMS DESIGN

1				
2				
3				
4	Radiant Section Design:	BURNER	SHIELDED	TARGET
5	Total Refractory Thickness	ENDWALL	SIDEWALLS	ENDWALL
6	Hot Face Temperature (design)	in 5.0	3.0	5.0
7	Hot Face Temperature (calculated)	°F 2,000	2,000	2,000
8	Hot Face Layer	°F 1,471	899	1,471
9	Back-Up Layer No.1	in/ --- 1/ 8# CF Blanket	1/ 8# CF Blanket	1/ 8# CF Blanket
10	Back-Up Layer No.2	in/ --- 1/ 8# CF Blanket	2/ 6# CF Blanket	1/ 8# CF Blanket
11	Foil Vapor Barrier	in/ --- 3/ 6# CF Blanket	None	3/ 6# CF Blanket
12	Castable Reinforcement (SS Needles)	in/ --- None	None	None
13	Anchors / Tie Backs:	wt% None	None	None
14	Material	--- Pins & Clips	Pins & Clips	Pins & Clips
15	Attachment	--- 310 S.S.	310 S.S.	310 S.S.
16	Casing:	--- Welded	Welded	Welded
17	Material	in/ ASTM 0.1875 / A36	0.1875 / A36	0.1875 / A36
18	Internal Coating	--- None	None	None
19	External Temperature, Typical	°F 180	180	180
20	Comments / Clarifications	--- w/ cfb wraps	w/o cfb wraps	w/ cfb wraps
21		SHOP Installed	SHOP Installed	SHOP Installed
22				
23		SIDEWALLS	ENDWALLS	
24	Convection Section Design:	SHIELD	FINNED	TUBESHEETS
25	Total Refractory Thickness	in 3.0	3.0	3.0
26	Hot Face Temperature (design)	°F 2,000	2,000	2,200
27	Hot Face Temperature (calculated)	°F 994	994	994
28	Hot Face Layer	in/ --- 1/ 8# CF Blanket	1/ 8# CF Blanket	3/ Sparlite HS
29	Back-Up Layer No.1	in/ --- 2/ 6# CF Blanket	2/ 6# CF Blanket	None
30	Back-Up Layer No.2	in/ --- None	None	None
31	Foil Vapor Barrier	in/ --- None	None	None
32	Castable Reinforcement (SS Needles)	wt% None	None	None
33	Anchors / Tie Backs:	--- Pins & Clips	Pins & Clips	Bullhorns
34	Material	--- 310 S.S.	304 S.S.	304 S.S.
35	Attachment	--- Welded	Welded	Welded
36	Casing:			
37	Material	in/ ASTM 0.1875 / A36	0.1875 / A36	0.1345 / A36
38	Internal Coating	--- None	None	None
39	External Temperature, Typical	°F 180	180	180
40	Comments / Clarifications	--- Cleaning/Sootblowing lanes: none		Bolted Assembly
41		SHOP Installed	SHOP Installed	SHOP Installed
42				
43		FLUE GAS DUCTS		
44	Stack & Uptakes Design:	BREECHING	15° TRANSITION	DISCH. DUCT
45	Quantity	One	One	One
46	Type / Location	--- Full L / Conv	Full L / Conv	Self.Spt / Grade
47	Length / Metal Outside Diameter (top)	ft/ ft 1.00 / n/ a	1.75 / n/ a	7 / 3.500
48	Discharge Elev., minimum/ calculated	ft/ ft n/ a / n/ a	n/ a / n/ a	20 / 29
49	Total Refractory Thickness	in 3.0	0.0	0.0
50	Hot Face Temperature (design)	°F 2,000		
51	Hot Face Temperature (calculated)	°F 517	517	517
52	Hot Face Layer	in/ --- 1/ 8# CF Blanket	None	None
53	Back-Up Layer No.1	in/ --- 2/ 6# CF Blanket		
54	Castable Reinforcement (SS Needles)	None		
55	Anchors / Tie Backs:	--- Pins & Clips		
56	Material	--- 304 S.S.		
57	Attachment	--- Welded		
58	Casing:			
59	Minimum Thickness/ Material	in/ ASTM 0.1875 / A36	0.1875 / A36	0.1875 / A36
60	Corrosion Allowance	in None	None	None
61	Internal Coating	--- None	None	None
62	External Temperature, Typical	°F 180	517	517
63	Comments / Clarifications	--- SHOP Installed		
64				



AMERICAN ENGINEERING SYSTEM of UNITS

HEATER DATA SHEET
P25-1204-HTRDS

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MECHANICAL / STRUCTURAL DESIGN BASIS

Refractory & Coatings Design:

Refractory Design Per Std560: 180°F Avg. Casing Temperature @ Ambient Conditions of 0 MPH & 80°F

Refractory Dryout SHOP dryout = None // FIELD dryout per THM standard.

Coating, Internal None

Coating, External Base Coat: 3-4 PPG Dimetecote 9 IOZ Silicate - Flat Green on SP-6

Int. Coat: None

Top Coat (casing): 1.5-2 PPG Hi-Temp 500 - Federal Standard 595B #16132 Gray

Top Coat (stack): 1.5-2 PPG Hi-Temp 1000 - Federal Standard 595B #16132 Gray

Applicable Standards:

API Std 560 (ISO 13705); Fired Heaters for ...

AISC

Specification for Design, ... Steel for Buildings

API Std 530 (ISO 13704); Calc. of Heater Tube ...

AWS

D 1.1; Structural Welding Code

ASME B31.3, Chemical Plant and ... Piping

ASTM

tube/ smls pipe/ fitting spec's noted herein

ASME Sections I, II, VIII, IX; ASME B&PV Code

ASTM

refractories per C27, C155, C401 & C612

ASME Section V; Non Destructive Examination

NFPA

NFPA 70; National Electrical Code

Wind Design:

Spec. or Standard ASCE 7-22

Seismic Design:

Spec. or Standard

ASCE 7-22

Velocity/ Imp. Factor 120 mph / 1

Risk Cat./Imp. Factor

III / 1.25

Site Exposure "C"

Ss/S1/Soil Class

0.5 / 0.15 / D

Physical Design:

Site Design Basis:

Plot Limitations None

Site Elevation

3500 ft AMSL

Tube Limitations None

Stack Design Temp.

90 °F

Firebox Pressure Positive; approximately +1.0 inH2O

FG Discharge Elev.

29 ft AG

Ambient Temp's -20 °F Min/ 60 °F Dsn/ 105 °F Max

Area Classification

Class I, Div. II, Groups C&D

MAJOR SUBSYSTEMS & ACCESSORIES

Major Services & Subsystems

Process Design INCLUDED in base pricing

Major Accessories:

Casing/ Tube Seals

None

Mechanical Design INCLUDED in base pricing

Observation Doors

None

Structural Design INCLUDED in base pricing

Observation Doors

1 4 in Dia. w/ HT glass on Arch

Radiant Section INCLUDED in base pricing

Access Doors

1 Std 24" x 24"

Convection Section INCLUDED in base pricing

Expansion Joints

None

Burner Mgmt INCLUDED in base pricing

Ladders & Platforms

Not Included

Burner Piping INCLUDED in base pricing

L&P Coating

N/A

Forced Draft System INCLUDED in base pricing

Casing Penetrations

Pressure Part Penetrations

Fbox Purge/ Snuff None

Coil TSTC's, Radiant

None

CA Temp/Pres None

Coil TSTC's, Convection

None

FG Temperature 2 1.5" 3000# Coupling

Process TI conn's

2 0.75" NPS 3000# Coupling

FG Pressure 2 1.5" 3000# Coupling

Process PI conn's

1 0.75" NPS 3000# Coupling

FG Comp. (Sample) 2 1.5" 3000# Coupling

PSV conn

N/A

FG Sample 2 4" 300# RFWN

Spare

1 1.5" NPS 300# RFWN

Stack Temp 1 0.75" 3000# Coupling

spare

O2 Analyzer Port 1 3" NPS 150# RFWN

Dampers

FD Fan (blower) qty = 0

Uptake Ducts

Stack

qty = 0

Function Note:

Note:

Design Fan inlet damper is inappropriate

Stack Damper (which provides draft

Materials for forced draft SHO's where O2

control) is inappropriate for forced

Bearings Control is provided by the BMS O2

draft SHO's where the combustion

Operator Trim Module which controls the fan

conditions are controlled real-time

Positioner (blower) motor's VFD/ VSD.

via the BMS.

Instruments

Sootblowers: Qty. Type Location FG T Material

Steam T & P

O.E.M. / Ref.

Lane 1: None

Lane 2: None



AMERICAN ENGINEERING SYSTEM of UNITS

HEATER DATA SHEET

P25-1204-HTRDS

Page 6 of 6



Our Products & Services

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Tulsa Heaters Midstream

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📞 918.392.8000

✉ info@tulsaheatersmidstream.com

🌐 www.tulsaheatersmidstream.com

ZEECO PROPOSAL



CLIENT: Kaiser Frontier Midstream

END USER: Kaiser Frontier Midstream

ZEECO QUOTE #: 2026-02131RA-01

QUOTE REV #: 2

DATE OF ISSUE: 3/10/2026

APPLICATION ENGINEER: Wes Kirk



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VAPOR CONTROL | RENTALS | AFTERMARKET**

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OR CALL OUR U.S. TOLL FREE NUMBER: 844 GO ZEECO

Contact Information:

Customer:	Casey Reininger	918.491.4536	caseyr@kfoc.net
Zeeco Local Contact:	Kyle Larsen	918.728.1616	kyle_larsen@zeeco.com
Zeeco Applications Engineer:	Wes Kirk	918.893.8389	wes_kirk@zeeco.com

Design Information (Estimated):

	Amine		TEG	
	Still	Flash	BTEX Drum	Flash
Source				
Gas MW	41.8	36.4	48.0	26.5
Gas LHV (Btu/Scf)	2	225	2326	1403
Max Flow Rate (lb/hr)	37062.5	3938	46.6	88.8
Available Pressure (psig)	3	60	0.125	60
Temperature (°F)	119.5	181.1	120	130
Heat Release (MMBtu/hr)	0.6	9.2	0.9	1.8

Scope of Supply:

Qty Equipment

- 1 Self-Supported Enclosure - 8' Dia. x 40' Tall (46 MMBtu/hr Max Capacity)
- 2 Utility Tip (UF) – Amine
- 1 Multi-Jet Tip (MJ) – Glycol
- 3 HSLF Pilot w/ Flame Scanner
- 1 Automatic Ignition/Monitoring Panel
- 1 Shutdown Monitoring & Controls (VCU-FG)
- 2 Shutdown Valve (Pneumatic)

Optional Equipment

- 1 2" Group D Deflagration Arrester w/Burnback Thermocouple (TEG)

Required Utilities:

Consumer	Utility Type	Consumption	Supply
EGF Pilot Gas	Fuel Gas	270 Scfh	10 psig
Assist Gas (Preheat)	Fuel Gas	9200 Scfh	30 psig
Assist Gas (Max)	Fuel Gas	38700 Scfh	30 psig
Control Panel (VCU)	Electricity	20 A	120 VAC / 1 Ph / 60 Hz

Customer Connections (Estimated, TBC by customer):

Service	Size	Type	Rating
Waste Gas - Amine	14"	RF	150#
Waste Gas – Glycol	2"	RF	150#
Fuel Gas	2"	NPT	3000#

Equipment Description:

Self-Supported Enclosure	The enclosure prevents flame from being seen by personnel while also increasing residence time to ensure high destruction efficiencies. The stack is mounted on a customer supplied foundation to secure the system and prevent it from blowing over in high winds.
Utility Tip (UF) – Amine	The UF style tip provides high stability combustion while also ensuring reliability of the flame from purge all the way to max flow rates. Components located in the high heat zone will be made of 310SS or equivalent casting material. The tip will provide a VOC destruction efficiency of at least 99wt%.
Multi-Jet Tip (MJ) – Glycol	The tip uses multi-jet technology to break up the exiting gas to allow for more fuel and air interaction to increase smokeless combustion. Components located in the high heat zone will be made of 310SS or equivalent casting material. The tip will provide a VOC destruction efficiency of at least 99 wt%.
HSLF Pilot w/ Flame Scanner	The premix pilot is proven to stay lit in hurricane force weather conditions. Testing has shown that a stable flame is present even in wind speeds greater than 150 mph in addition to rainfall of over 10 inches per hour. The pilot is paired with UV flame scanner for continuous monitoring of the pilot status. The pilot also meets or exceeds API 537 design requirements.
Automatic Ignition/Monitoring Panel	The automatic pilot ignition and monitoring panel will continuously monitor the pilot and attempt to relight if a pilot failure signal is received. The control panel will require customer supplied electricity and also be skid mounted.
Shutdown Monitoring & Controls (VCU-FG)	The burner management and high temperature shutdown systems ensure that the unit will operate in a safe manner to protect both personnel and equipment while controlling emissions efficiently. Operating temperature is controlled via a fuel gas burner and automated damper to control the amount of heat required in the combustion chamber. A shutdown will be initiated when either a high temperature or pilot failure is detected. All gas sources should be shut in indefinitely until personnel can check the system to ensure that there is not a build-up of combustible vapors or damage to the equipment.
Shutdown Valve (Pneumatic)	A butterfly valve is installed upstream of the system to shutdown in the event of an unsafe condition.
Optional Equipment	
Group D Deflagration Arrester	<i>If a potential for having combustible levels of oxygen in the waste exists, an arrester is recommended to ensure that any flashback from the tip is stopped before it can enter into the upstream piping system.</i>
Burnback Thermocouple	<i>A thermocouple is installed on the downstream side of the arrester to alarm if a sustained flame flashback is achieved at the arrester element.</i>

Commercial:

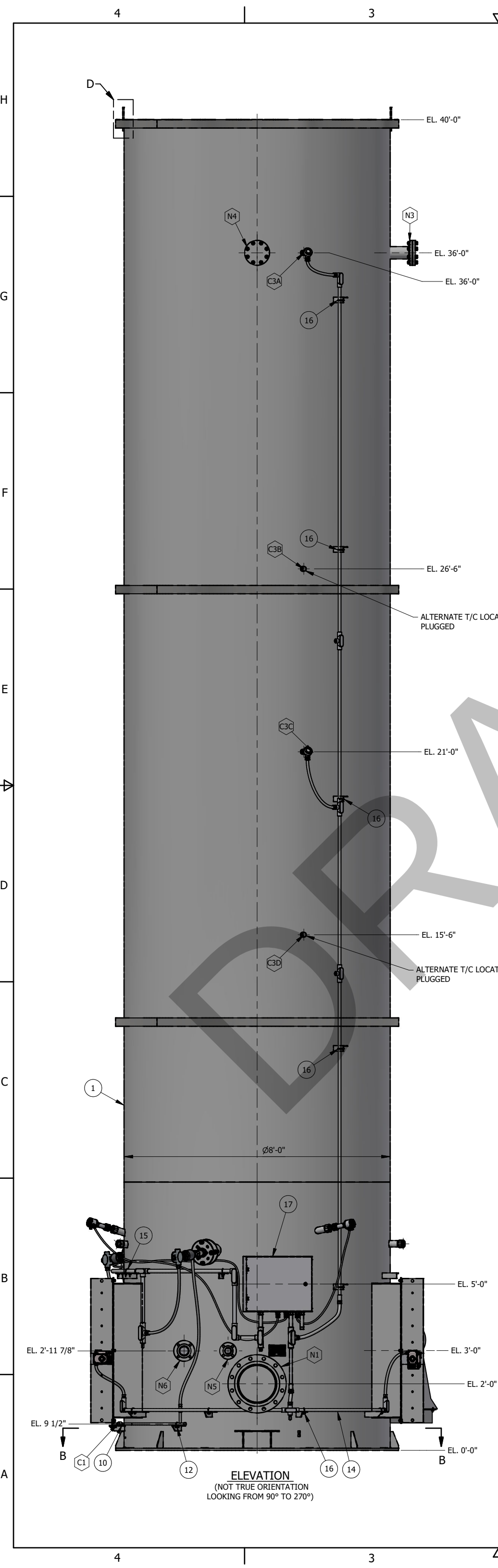
Purchase Pricing:

Description	Model #	Unit Price (USD)
Self-Supported 8' Dia. x 40' Tall Oxidizer	VCU-8-40-FG	\$282,970

Optional Equipment

2" Group D Deflagration Arrester w/Burnback T/C (TEG)	2-FA-D-E-T/C	Add	\$3,880
---	--------------	-----	---------

Schedule	Equipment will be ready for shipment within 16-18 weeks ARO*. <i>If you require a quicker delivery schedule, please contact Zeeco.</i> *Schedule based on Zeeco Standard Documentation (Information Only): GA, P&ID and Wiring Schematic Drawings IOM and Quick Start Installation Manuals (Digital Copies Only) Miscellaneous Equipment Cut Sheets
Freight	Prepaid and added to our invoice at cost + 15%
Shipping	Ex-Works (Point of Manufacture) per Incoterms 2020
Payment Terms	Net 15 20% on order placement 30% on drawing submittal 40% on start of fabrication 10% on readiness to ship
Warranty	Length; 18 months from date of shipment or 12 months after startup, whichever condition occurs first. Refer to Zeeco terms and conditions of sale for further clarifications.
Storage	Zeeco will provide space for storage of each unit up to 2 months after notification of readiness to ship free of charge. If you require storage periods longer than 2 months, a fee of 1% of the equipment value will be charged per month until the equipment is moved off site.
Quote Validity	30 days
Terms & Conditions	This proposal is contingent upon acceptance of Zeeco, Inc Standard Terms and Conditions of Sale (attached).
Notes	- Field erection and/or assembly are not included in our scope of supply but can be quoted separately. - Commissioning or startup assistance can be provided but are not included in our proposal. - No foundation design or civil engineering services are included in our scope. - Document/drawing approval has not been considered. Only standard documents as listed above (information only) are applicable. - Design is based solely on process conditions, any other specifications have not been considered. - System is to be designed in accordance with ASME STS-1 with elastic foundation considered and to be fabricated per ASME code. Stack is open to atmosphere therefore hydrotesting is not considered. - Minimum structural design per ASCE 7-16 (120 mph, Risk Category III, Site Class D). - External carbon steel to be prepared per SSPC-SP6. Prime coat Inorganic Zinc (2.5 MILS DFT Min). One Coat High Temp Aluminum (1 MIL DFT MIN) silver finish. - Zeeco may charge additional fees to recover any vendor management services required by the Customer. - Any customer specific AML, Specifications, VDR or Inspection Test Plan has not been considered for this offer. This system would be executed based on Zeeco standard practices. - Expected Emissions: ≥99% DRE, 0.15 lb/MMBtu NOx



PARTS LIST			
ITEM	QTY	DESCRIPTION	P/N
1	1	VCU-8-40 STACK ASSEMBLY (80338-S-075-001)	
2	8	ANCHOR BOLT WASHER (78079-S-075-002)	
3	1	AMINE BURNER ASSEMBLY (80338-S-007-001)	
4	1	ASSIST GAS INTERMEDIATE PIPE SPOOL (80338-S-066-141)	
5	1	ASSIST GAS RING ASSEMBLY LEFT HAND (80338-S-066-142)	
6	1	ASSIST GAS RING ASSEMBLY RIGHT HAND (80338-S-066-143)	
7	1	GLYCOL BURNER (80338-S-076-001)	
8	3	SM PILOT WITH IONIZATION ROD (80338-A-043-001)	
9	3	PILOT GAS FLEX LNE (1/2" MNPT X 1/2" MNPT X 60" LG)	
10	1	PILOT GAS MANIFOLD (80338-S-066-130)	
11	3	ZPF-120 FLAME SCANNER	KC-4678
12	4	U-BOLT-1/4" DIA. W/ (4) NUTS FOR 1/2" PIPE	
13	2	STACK THERMOCOUPLE	053001-0494
14	1	CONDUIT LOT (MULTIPLE SIZES)	
15	4	U-BOLT-1/4" DIA. W/ (4) NUTS FOR 1" PIPE	
16	9	U-BOLT-1/4" DIA. W/ (4) NUTS FOR 3/4" PIPE	
17	1	JUNCTION BOX JB-101 (80338-C-035-130)	
18	4	BOLT MACHINE HEX 1/4-20 X 3/4 A307 ZINC PLATED	080004-0075
19	4	NUT HEX 1/4-20 ASTM A563 GR.2 FINISHED ZINC PLATED	081001-0047
20	4	WASHER FLAT 1/4 F436 ZINC PLATED	082001-0097
21	2	48"x48" ACTUATED DAMPER	
22	16	BOLT HEX 1/2-13 X 1 A193 B8 HEAVY	080001-0050
23	24	NUT HEX 1/2-13 A194 2H HEAVY ZINC PLATED	081001-0167
24	8	BOLT MACHINE HEX 3/4-10 X 2 A307 ZINC PLATED	080004-0006
25	8	NUT HEX 3/4-10 A194 2H HEAVY ZINC PLATED	081001-0169
26	1	5HP BLOWER W/ FLANGED OUTLET (AP-P08)	
27	1	BLOWER SUPPORT (80338-S-060-110)	
28	8	BOLT HEX 1/2-13 X 1-1/2 A307B HEAVY ZINC PLATED	080001-0098
29	4	BOLT MACHINE HEX 3/8-16 X 1-1/4 A307 ZINC PLATED	080004-0056
30	4	NUT HEX 3/8-16 A194 2H HEAVY ZINC PLATED	081001-0166
31	4	WASHER FLAT 3/8 F436 HARDENED ZINC PLATED	082001-0026

- NOZZLE LEGEND -					
ITEM	SERVICE	SIZE	RATING	TYPE	FLG. MAT'L
N1	AMINE INLET	14"	150#	RFSO	A105
N2	BLOWER INLET: 13.5" O.D w/ (8) 7/16" DIA HOLES ON 11.75" BCD	8"	N/A	PLATE	A36
N3-N4	SAMPLE PORT W/BLIND	4"	150#	RFSO	A105
N5	ASSIST GAS INLET	2"	150#	RFSO	A105
N6	GLYCOL INLET	2"	150#	RFSO	A105
C1	PILOT GAS MANIFOLD INLET	1/2"	3000#	FNPT	N/A
C2	PILOT GAS INLET	1/2"	3000#	FNPT	N/A
C3A-C3D	STACK T/C CONNECTION	1"	3000#	FNPT	N/A
C4-C5-C6	SIGHT PORT	2"	N/A	FNPT	A105

-DESIGN DATA-	
STACK TYPE	SELF SUPPORTED
FOUNDATION TYPE	SEE NOTE 10
DESIGN CODE	ASME STS-1-2021
WIND DESIGN	ASCE 7-22, 105 mph, RISK CAT II, EXP. "C"
SEISMIC LOAD	ASCE 7-22 SITE CLASS D Ss=0.099, S1=0.038, SMS=0.150, SM1=.100, I.F.=1.0
FLUID	FLARE GAS
SHELL DESIGN PRESS	ATMOSPHERE
SHELL DESIGN TEMP.	-20° ~ 400° F
PROCESS PIPE DESIGN PRESS	50 PSIG
PROCESS PIPE DESIGN TEMP.	-20° ~ 200° F
P.W.H.T.	NO
RADIOGRAPH	PER T/P, SPOT
CORROSION ALLOWANCE	C.S.: 1/16" / S.S.: NONE

- NOTES
- PILOT MIXER ORIFICE DRILLED: 1/16" [1.588mm]
 - PILOT GAS CONSUMPTION: 90 SCFH @ 10.5 PSIG [2.41 Nm³ /HR @ 0.74 kg/cm² g] PER PILOT OR BACK-UP PROPANE GAS CONSUMPTION: 42 SCFH @ 5 PSIG [1.12 Nm³ /HR @ 0.35 kg/cm² g] PER PILOT
 - PILOT ORIFICE DRILLING BASED ON 1000 BTU/SCF (LHV) GAS WITH 0.62 SP. GR.
 - THE FLARE TIP REQUIRES A MINIMUM CONTINUOUS PURGE OF 290 SCFH FOR AMINE TIP AND 25 SCFH FOR GLYCOL TIP, OF A GAS THAT WILL NOT GO TO DEW POINT AT OPERATING TEMPERATURES.
 - ALL FLANGE BOLTING TO STRADDLE NORMAL CENTERLINES, UNLESS NOTED OTHERWISE.
 - ALL TESTING PER INSPECTION TEST PLAN DOCUMENT NO. 80338-4010
 - ALL EXTERNAL CARBON STEEL SURFACES TO BE PREPARED PER SSPC-SP6. PRIMER: SHERWIN WILLIAMS ZINC CLAD II OR ZINC CLAD 2500 2.0-4.0 MILS DFT MIN. TOP COAT: HEAT FLEX HI-TEMP 500 2.0-2.5 MIL DFT. COLOR: SILVER/ALUMINUM, TOP 5'-0" TO BE PAINTED BLACK
 - NO PAINT OR SURFACE PREP REQUIRED FOR STAINLESS STEEL SURFACES.
 - FLAME ARRESTOR MUST BE MOUNTED DIRECTLY TO WASTE GAS INLET NOZZLE (IF APPLICABLE), NO PIPING ALLOWED BETWEEN ARRESTOR AND INLET. ARRESTOR SHIPS LOOSE.
 - FOUNDATION IS CONSIDERED TO BE "ELASTIC" PER ASTM STS-1-2021.
 - MINIMUM 6" DEEP OF AGGREGATE (OR TO BOTTOM OF DAMPERS) TO BE INSTALLED INSIDE BASE OF STACK (BY OTHERS). SCREENING TO BE PER ASTM-C33#3. AGGREGATE SHOULD BE MIN. 1.5"-2" DIAMETER GRAVEL OR CRUSHED STONE TYPE TO BE IGNEOUS OR METAMORPHIC ROCK. SEDIMENTARY ROCK SHOULD BE AVOIDED. LIMESTONE AND SANDSTONE SHOULD NEVER BE USED.
 - WRAP ALL CARBON STEEL INTERIOR PIPING WITH CERAMIC FIBER BLANKET.
 - THE LIFTING LUGS ARE IN THE HEAT AFFECTED ZONE. IF THEY ARE USED FOR SUBSEQUENT LIFTS, THEY SHOULD BE THOROUGHLY INSPECTED BY A QUALIFIED INSPECTOR AND DYE PENETRANT TESTS OF 100% OF THE WELDS ATTACHING THE LUGS TO THE FLARE TIP SHELL SHOULD BE PERFORMED.

0	19 NOV 25	ISSUED FOR INFORMATION ONLY	JCH	JJC	WMK
REV	DATE	REVISION DESCRIPTION	BY	PE	APP.
SALES ORDER: 80338			TOLERANCES PER ZQS-QUA-IV-010 (LATEST REVISION), UNLESS OTHERWISE NOTED		
CUSTOMER			3 RD ANGLE PROJ		
JOB SITE:			DIMS IN INCHES (MM), UNLESS OTHERWISE STATED.		
END USER:			DRAWN DATE: 19 NOV 25		
P.O. NO.:			PE APP WMK		
SCAN TO ORDER SPARE PARTS			SCALE NONE SHEET NO. 1 OF 3		
ZEECO, INC. 22151 EAST 91st STREET BROKEN ARROW, OK 74014 PHONE: (918) 258-8551 FAX: (918) 251-5519 WWW.ZEECO.COM SALES@ZEECO.COM			DWG. NO. 80338-G-075-001		
PROPRIETARY DATA IS INCLUDED IN THE INFORMATION DISCLOSED HEREIN AND IS THE PROPERTY OF ZEECO, INC. THIS INFORMATION IS SUBMITTED IN CONFIDENCE AND MUST BE USED IN CONNECTION WITH WORK DONE FOR ZEECO, INC. AND ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED. UNAUTHORIZED DISCLOSURE OR USE IS PROHIBITED BY LAW.			REV. NO. 0		

Purge blower not currently included.

Amine

TEG

DETAIL D
(LIFTING LUG DETAIL)

DETAIL F
(ANCHOR BOLT WASHER)

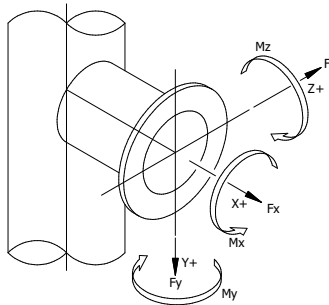
PLAN VIEW

SECTION C-C
BASING DETAIL
FOR 3/4" ANCHOR BOLTS
F1554 GR 36

STACK
(ANCHOR BOLTS & NUTS
SUPPLIED AND INSTALLED
BY OTHERS)

LOAD CASE	STACK FOUNDATION LOADS		
	VERTICAL LB	SHEAR LB	MOMENT LB-FT
DEAD	22396	0	0
NOZZLE	1155	1331	7117
WIND	0	5203	98065
SEISMIC	0	1012	267080

SECTION B-B



PIPE SIZE (IN)	Fx LB	Fy LB	Fz LB	Mx LB-FT	My LB-FT	Mz LB-FT
14	450	750	750	1070	800	800
3	150	300	300	475	350	350

MAX ALLOWABLE INLET NOZZLE LOAD
(PER API 537)

SECTION E-E
(TAILING LUG DETAIL)

SIDE VIEW



SCAN TO ORDER
SPARE PARTS

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ARE RESERVED. UNAUTHORIZED DISCLOSURE OR USE IS
PROHIBITED BY LAW.

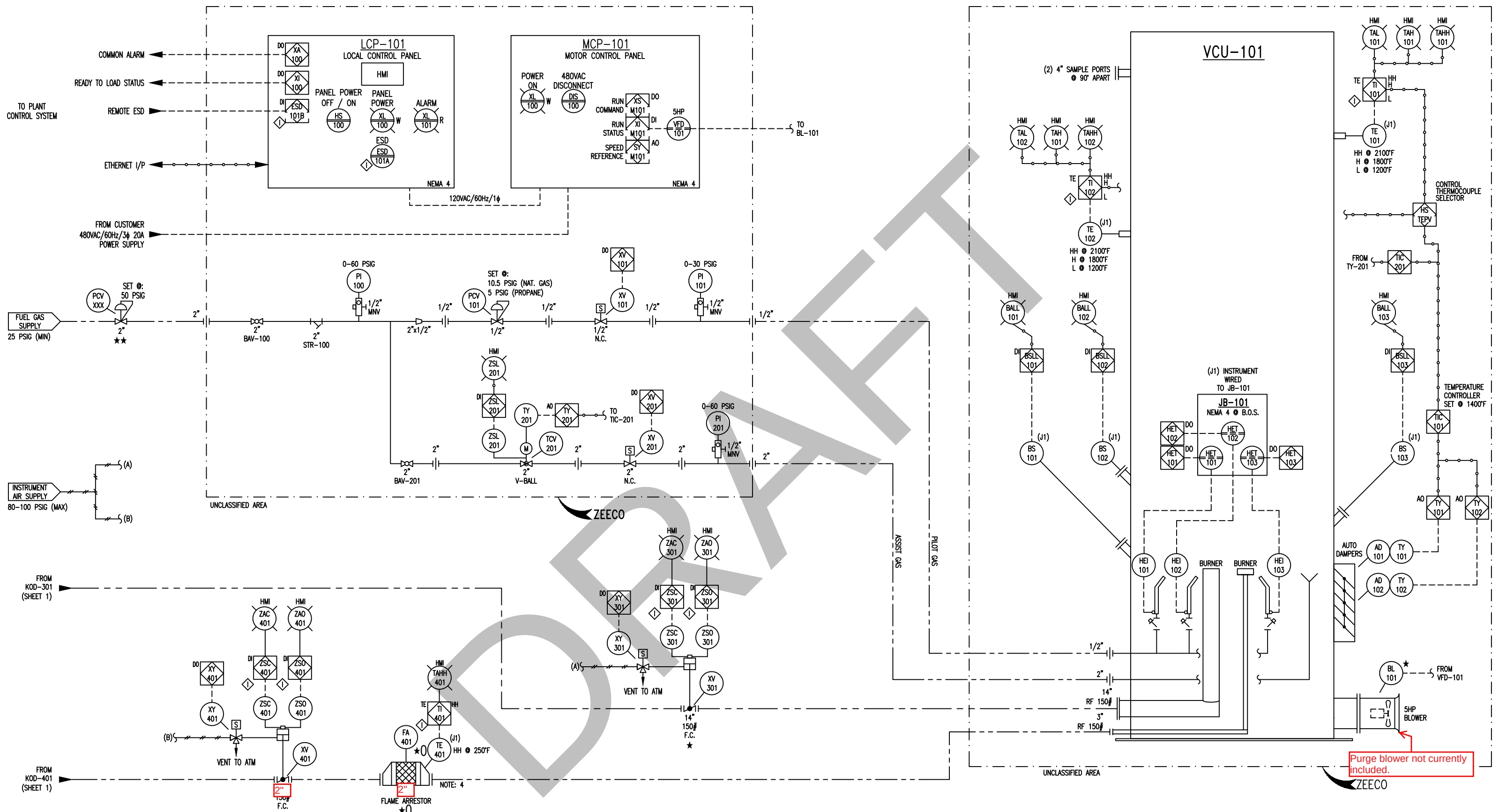


GENERAL ARRANGEMENT OF
VCU-8-40

DRAWN	JCH	DATE	19 NOV 25
PE	JJC	APP	WMK
SCALE	NONE	SHEET NO.	2 OF 3

DWG. NO.
80338-G-075-001

REV. NO.
0



LEGEND:

- PIPING
 - PIPING BY OTHERS
 - ELECTRICAL
 - DCS SOFTWARE
 - SKID LIMITS
 - 316SS TUBING & FITTINGS (SWAGelok OR EQUAL) 3/8" UNLESS NOTED OTHERWISE
 - ITEMS SHIPPED LOOSE AND INSTALLED BY OTHERS
 - ITEMS FURNISHED AND INSTALLED BY OTHERS
- INSTRUMENT (LOCALLY MOUNTED)
 - INSTRUMENT (MOUNTED ON MAIN PANEL)
 - INSTRUMENT (MOUNTED ON LOCAL PANEL)
 - INSTRUMENT (MOUNTED INSIDE PANEL)
 - LIGHT
 - DCS-DISTRIBUTED CONTROL SYSTEM
 - PLC-PROGRAMMABLE LOGIC CONTROL

NOTES:

- INTERCONNECTING HARD PIPING/HARD CONDUIT (IF REQUIRED) BETWEEN THE FLARE CONTROL PANEL AND THE FLARE STACK IS BY OTHERS.
- FLARE CONTROL PANEL TO BE 30' (MIN.) AWAY FROM FLARE STACK.
- THE PRIMARY IGNITION SOURCE FOR PILOTS ARE ELECTRIC SPARK IGNITORS LOCATED ON EACH PILOT.
- INSTALL THE ARRESTOR DEVICE DIRECTLY TO THE FLARE INLET. IF A SPOOL IS NEEDED, IT SHOULD BE OF MINIMUM LENGTH.

NO.	DATE	REVISION DESCRIPTION	BY	CKD.	APP.
0	12NOV25	INITIAL RELEASE	WLW	MLK	JJC

CUSTOMER:		JOBSITE:	
END USER:		P.O. NO.:	
S.O. NO.: 80338		P.O. NO.:	
SCAN TO ORDER SPARE PARTS		DRAWN WLW DATE 12NOV25	
P.E. JJC A.E. WMK		SCALE NONE SHEET NO. 1 OF 1	
DWG. NO. 80338-C-041-001		REV. NO.: 0	



FLARE SYSTEMS

22151 East 91st Street | Broken Arrow, OK 74014 USA | +1 (918) 258 8551 | zeeco.com



INSTALLATION, CONSTRUCTION, & ERECTION SERVICES

Managing an array of system engineers and contractors and dealing with unpleasant surprises can result in significant downtime for installations and lead to business losses. Let Zeeco's Global Field Services eliminate the hassles, reduce costs, and save time and resources by assuming single-point responsibility for your project. With Zeeco, there are no contractual layers between the customer, the OEM supplier, and the contractors. You're guaranteed a single team with a single vision and singular commitment to your success – all backed by the world leader's engineering experience in combustion and environmental solutions.



FLAREGUARDIAN™

The award-winning ZEECO® FlareGuardian flare monitor is a revolutionary instrument utilizing patented Video Imaging Spectro-Radiometry (VISR) technology. The innovative device allows operators to directly, continuously, and autonomously measure flare performance – including Combustion Efficiency (CE), smoke index levels, flame stability, flame footprint, heat release, and pilot presence – in real-time. Eliminate the tedious aiming, data reduction, and ongoing operation and maintenance costs associated with other flare monitoring methods while staying in compliance with the most stringent EPA or other environmental regulations.



PARTS

It doesn't matter if your equipment was manufactured by Zeeco or another combustion equipment supplier. We have what you need to restore or improve your equipment's safety, efficiency, functionality, and environmental performance at a competitive price. Plus, our experts understand the complexities of your system, not just the replacement parts. If you need custom components made specifically for your project, Zeeco can engineer a solution to fit seamlessly into your system and have it operating like new or better.



FLARE TIP ENGINEERED SOLUTIONS

There are many reasons why flare tips shouldn't be replaced like-in-kind, especially if a failure is being replicated. Regardless of the original equipment manufacturer, let Zeeco's Engineered Solutions team evaluate the root cause of your flare tip failure or revised process requirements. Whether the need for change is due to mechanical failures, operational struggles, or updated environmental rules, our team of engineers is ready to provide the optimal technology for your plant moving forward.

THE SALE OF EQUIPMENT, PARTS, MATERIALS, SUPPLIES, SOFTWARE AND OTHER GOODS (THE "GOODS") OR SERVICES (THE "SERVICES"), AS DESCRIBED IN SELLER'S QUOTATION OR PROPOSAL (THE "PROPOSAL"), ARE EXPRESSLY CONDITIONED UPON BUYER'S AGREEMENT TO THESE TERMS & CONDITIONS. ANY ADDITIONAL OR DIFFERENT TERMS PROPOSED BY BUYER ARE EXPRESSLY OBJECTED TO AND WILL NOT BE BINDING UPON SELLER UNLESS AGREED TO IN WRITING BY SELLER. ANY PURCHASE ORDER (THE "ORDER") ISSUED BY BUYER FOR THE PURCHASE OF GOODS OR SERVICES SHALL CONSTITUTE BUYER'S AGREEMENT TO THESE TERMS & CONDITIONS. UNLESS OTHERWISE SPECIFIED IN THE PROPOSAL OR THE ORDER, ANY PROPOSAL BY SELLER SHALL EXPIRE THIRTY (30) DAYS FROM ITS DATE AND MAY BE MODIFIED OR WITHDRAWN BY SELLER BEFORE RECEIPT OF BUYER'S ACCEPTANCE. THE GOODS AND SERVICES ARE COLLECTIVELY REFERRED TO AS THE "WORK." UNLESS OTHERWISE STATED, THE SELLER SHALL BE ZEECO, INC., 22151 EAST 91ST STREET, BROKEN ARROW, OKLAHOMA 74014 (USA), AND THE BUYER SHALL BE THE PARTY IDENTIFIED AS SUCH ON THE ORDER.

1. PRICE: Unless otherwise stated in the Proposal, the price of the Order (the "Price") is fixed and firm and is exclusive of all taxes, duties, fees, charges or assessments of any nature levied by any governmental authority. Additionally, unless otherwise stated in the Proposal, the Price is contingent upon the use of sub-contractors and sub-suppliers listed on Seller's Approved Manufacturers List ("AML") as may be amended from time-to-time, and the manufacture of Goods pursuant to Seller's standard painting procedures. Payment terms shall be as stated in the Proposal and Seller's acceptance of the Order is subject to credit approval that may include payment by means of an irrevocable documentary letter of credit issued by a first-class U.S. bank acceptable to Seller with funds payable upon delivery of customary presentation documents. The form of the letter of credit shall be negotiated by the parties and submitted to Seller for approval prior to issuance. All costs and fees of the letter of credit shall be to Buyer's account. Seller shall not be required to obtain any form of payment or performance security in favor of the Buyer, including but not limited to, bank guarantees, standby letters of credit, or surety bonds. Buyer's breach of agreed payment terms may result in: (a) Seller's suspension of the Work; (b) Seller's termination of the Order due to Buyer's default; (c) Buyer's liability for Seller's mobilization and demobilization costs in the event of suspension or termination by Seller, in addition to other damages; (d) Seller's demand for further assurances of performance by Buyer which may include, without limitation: (i) alteration of payment terms or milestones; (ii) full payment prior to shipment; (iii) additional payment security; (iv) or a delay in shipment that may exceed the length of Buyer's delay in payment.

2. CHANGES: Order changes by Buyer may significantly and disproportionately affect both the Price and completion or delivery date(s) (the "Delivery Schedule"). If Buyer desires to make a modification to the quantity, place, Delivery Schedule, or method of delivery, or the drawings, designs, or specifications of the Work (a "Change"), then Buyer shall so notify Seller in writing and provide sufficient details and descriptions of the proposed Change so that Seller may evaluate the impact of the Change on the Price, Delivery Schedule, or both. Under no circumstances shall Seller be obligated to perform a Change without an agreement concerning modifications to the Price, Delivery Schedule, or both.

3. DELAYS BY BUYER: If Buyer delays delivery for any reason, including but not limited to technical modifications or Changes, suspension, failure to review drawings submitted by Seller within the time specified, or any other cause (whether or not within Buyer's control), such delays may significantly and disproportionately affect both the Price and Delivery Schedule, which shall then be subject to a reasonable adjustment. The impact of Buyer caused delays on the Delivery Schedule may, in some cases, be more significant or of a longer duration than the actual period of Buyer's delay. In the event of Buyer's delay for any reason Seller shall be entitled to invoice Buyer, and Buyer agrees to pay timely, for materials on hand, fabrication completed or in process, and services provided. Unless specified in the Order, or otherwise by written agreement, where the Order requires submission of certain documents (including but not limited to drawings, manuals, or other documents related to the Goods) by Seller to Buyer for approval, then Buyer shall respond to such submission with approval or rejection within fourteen (14) days after Seller's issuance of such document(s) to Buyer. The failure of Buyer to approve or reject the document(s) by such time shall result in the document(s) being deemed approved and accepted.

4. LIMITED WARRANTY FOR GOODS: Seller warrants the Goods will operate substantially in conformance with Seller's specifications stated the

Proposal and will be free from defects in material and workmanship for a period of twelve (12) months from the date of initial operation, or eighteen (18) months from the date of shipment, whichever is earlier (the "Warranty Period") when subjected to normal, proper and intended usage by properly trained personnel. Seller agrees during the Warranty Period, to repair or replace, at Seller's option, defective Goods so as to cause the Goods to operate in substantial conformance with Seller's specifications; provided that Buyer shall: (a) promptly notify Seller in writing upon the discovery of any defect and specify details of the warranty claim; (b) provide Seller with all operating data that Seller may reasonably request in order for Seller to evaluate the warranty claim; and (c) after Seller's review of the warranty claim, return the defective Goods to Seller with costs prepaid by Buyer if required to do so by Seller. Replacement parts may be new or refurbished. Shipment to Buyer of repaired or replaced Goods shall be in accordance with the delivery terms of the Order. Notwithstanding any other provision of this warranty, Seller may at its option, elect to send a service technician to Buyer's site to inspect, repair or replace (if applicable) warranted Goods, or otherwise to determine whether the Goods should be returned to Seller for repair or replacement. Goods or components thereof that are obtained by Seller from an original manufacturer or third party supplier are not warranted by Seller, but Seller will, to the extent possible, assign to Buyer any warranty rights in such Goods or components that Seller received from the original manufacturer or third party supplier. Consumables such as, but not limited to, bulbs, fuses, thermocouples, gaskets, and similar items are outside the scope of this warranty. Seller's warranty assumes the Goods are "at grade," and all responsibility for and costs of removal and/or reinstallation of warranted parts or Goods as well as the cost of and responsibility for gaining access to the warranted parts or Goods, are excluded from this warranty. If the Goods are not placed into service within six (6) months after shipment, in order to validate the warranty, the Goods shall be inspected by Seller at the time of commissioning and refurbished, if necessary, to like new condition at the Buyer's expense. For any extended time of storage at the jobsite without assembly/installation, the Goods shall be stored and protected in accordance with Seller's instructions and industry standard long-term storage methods. This warranty shall be void if the Goods have been: (w) exposed to corrosion, erosion, or chemical attack; (x) operated contrary to Seller's instructions or accepted industry practices; (y) improperly maintained or operated, or subjected to accident, abuse, or vandalism; or (z) operated in conditions other than those stated in Buyer's written specifications. Additionally, this warranty shall be void if the Buyer is not in compliance with its payment obligations to Seller pursuant to the Order. Seller shall have no obligation to make repairs, replacements or corrections resulting from normal wear and tear to the Goods. If Seller determines that a warranty claim is not valid, then Buyer shall pay or reimburse Seller for all costs of investigating and responding to such claim, including non-warranty parts sold or installed, at Seller's then prevailing daily service rates and materials rates. ANY INSTALLATION, MAINTENANCE, REPAIR, SERVICE, RELOCATION OR ALTERATION OR OTHER TAMPERING WITH THE GOODS, THAT IS PERFORMED BY ANY PERSON OR ENTITY OTHER THAN SELLER WITHOUT SELLER'S PRIOR WRITTEN APPROVAL, OR ANY USE OF REPLACEMENT PARTS NOT SUPPLIED BY SELLER, SHALL IMMEDIATELY VOID AND CANCEL ALL WARRANTIES WITH RESPECT TO THE GOODS. IF THE WARRANTY BECOMES VOID, THE BUYER MAY PURCHASE FROM SELLER, IF AVAILABLE, A SERVICE AGREEMENT OR ONE-TIME SERVICE AT THEN CURRENT RATES. THE OBLIGATIONS CREATED BY THIS WARRANTY TO REPAIR OR REPLACE DEFECTIVE GOODS SHALL BE THE SOLE REMEDY OF BUYER IN THE EVENT OF A WARRANTY CLAIM. SELLER MAKES NO WARRANTY, EITHER EXPRESS OR IMPLIED, OTHER THAN AS STATED HEREIN. SELLER DISCLAIMS ALL IMPLIED WARRANTIES.

5. LIMITED WARRANTY FOR SERVICES: Seller warrants the Services will conform to the specifications stated in the Proposal and will be performed in a workmanlike manner. The warranty on Services shall be for a period of three (3) months following completion of the Services (the "Service Warranty Period"). Seller agrees during the Service Warranty Period, to re-perform any defective Services; provided that Buyer shall promptly notify Seller in writing upon the discovery of any defect and specify details of the warranty claim. THE OBLIGATIONS CREATED BY THIS WARRANTY TO REPERFORM DEFECTIVE SERVICES SHALL BE THE SOLE REMEDY OF BUYER IN THE EVENT OF A WARRANTY CLAIM. SELLER MAKES NO WARRANTY, EITHER EXPRESS OR IMPLIED, OTHER THAN AS STATED HEREIN. SELLER DISCLAIMS ALL IMPLIED WARRANTIES.

6. BACKCHARGES: No backcharges will be paid or allowed by Seller unless Seller is notified in writing of any claim of defect in the Goods or Services and Seller is given a minimum of thirty (30) days within which to begin remediation of such defect. All backcharges must be approved in writing by Seller before

any Services are reperformed or any Goods are repaired, replaced, or altered in any manner by Buyer or returned to Seller.

7. CANCELLATION FEE: Buyer may cancel the Order for convenience prior to delivery upon written notice to Seller, in which case Seller will cease activity (except that related to the cancellation) and promptly terminate all related subcontracts. In such event, Buyer shall pay the greater of: (a) Seller's total costs incurred in performing the Order up to the date of receipt of notice of cancellation and all costs associated with the cancellation, including but not limited to, costs of canceling related subcontracts and any currency hedge(s) maintained by Seller relative to the Order, plus reasonable overhead and profit; or (b) a cancellation fee of twenty-five percent (25%) of the Price. However, the amount payable to Seller for cancellation will not exceed the Price.

8. TERMINATION FOR DEFAULT: Buyer may declare Seller in default only if: (a) Seller breaches a material provision of the Order; (b) Buyer provides Seller thirty (30) days written notice specifying Seller's alleged breach in detail; and (c) Seller fails to reasonably cure such alleged breach within the thirty (30) day period following Seller's receipt of Buyer's written notice. In the event of Seller's uncured default, Buyer's sole remedy shall be to terminate the Order and recover any payments made to Seller for the Order.

9. INTELLECTUAL PROPERTY INFRINGEMENT & INDEMNITY: Seller warrants the Goods do not infringe any United States patent. Seller shall, subject to the limitations herein, indemnify Buyer for reasonable damages if the Goods are held to constitute infringement of a United States patent. This indemnity shall not apply: (a) to Goods or parts thereof manufactured pursuant to Buyer's design, or to changes in Seller's design requested by Buyer; and (b) if the infringement is a result of Buyer's operation of the Goods. Buyer shall promptly notify Seller in writing of any alleged claim of infringement, permit Seller to control the defense or compromise of any such claim, and render such assistance as Seller may require. Seller shall have no indemnity obligations to Buyer under this Section if the Buyer is not in compliance with its payment obligations to Seller pursuant to the Order.

10. INDEMNITY: Seller shall be responsible for any illness, injury or death, of the employees of the Seller, its subsidiaries, and their officers, directors, employees, agents, and contractors (collectively, the "Seller Group") and for the loss or damage to the property of any member of the Seller Group, arising out of or relating to the performance of this Order and REGARDLESS OF WHETHER CAUSED OR BROUGHT ABOUT BY THE NEGLIGENCE (INCLUDING ACTIVE, PASSIVE, SOLE, JOINT OR CONCURRENT NEGLIGENCE) OF THE BUYER, ITS SUBSIDIARIES AND ITS CUSTOMER OR ULTIMATE RECIPIENT OR USER OF THE GOODS OR SERVICES AND THEIR OFFICERS, DIRECTORS, EMPLOYEES, AGENTS AND CONTRACTORS (COLLECTIVELY, THE "BUYER GROUP") OR ANY OTHER THEORY OF LEGAL LIABILITY, and Seller shall release, defend, protect, indemnify and hold harmless all members of the Buyer Group from and against any loss, cost, claim, suit, judgment, award or damage (including reasonable attorney's fees) on account of such illness, injury or death, loss or damage. In exchange, Buyer shall be responsible for any illness, injury or death, of the employees of any member of the Buyer Group and for the loss or damage to the property of any member of the Buyer Group, arising out of or relating to the performance of this Order and REGARDLESS OF WHETHER CAUSED OR BROUGHT ABOUT BY THE NEGLIGENCE (INCLUDING ACTIVE, PASSIVE, SOLE, JOINT OR CONCURRENT NEGLIGENCE) OF ANY MEMBER OF THE SELLER GROUP OR ANY OTHER THEORY OF LEGAL LIABILITY, and Buyer shall release, defend, protect, indemnify and hold harmless all members of the Seller Group from and against any loss, cost, claim, suit, judgment, award or damage (including reasonable attorney's fees) on account of such illness, injury or death, loss or damage. Seller and Buyer shall each release, defend, protect, indemnify and hold harmless each other, and the applicable members of the Seller Group or Buyer Group, from and against any loss, cost, claim, suit, judgment, award or damage (including reasonable attorney's fees) for illness, injury, death, or damage to property of third parties (not included within the definitions of Seller Group or Buyer Group) but only to the extent caused by the negligent acts or omissions of such party. Seller shall have no indemnity obligations to Buyer under this Section if the Buyer is not in compliance with its payment obligations to Seller pursuant to the Order. Should any of the preceding indemnities be judged unenforceable or be limited by applicable law, then each party's indemnity obligations to the other shall be limited to the extent that liability for any such illness, injury, death or damage to property is caused by the negligent acts or omissions of such party.

11. GOVERNING LAW: To the maximum extent permissible, this Order shall be governed and construed in accordance with the laws of the State of

Oklahoma (U.S.A.), exclusive of any principles of conflicts of laws that would require application of the substantive laws of another jurisdiction. The exclusive venue for all legal actions under this Order shall be the State or Federal Courts sitting in Tulsa, Oklahoma (U.S.A.), and the parties submit to the personal jurisdiction thereof and waive any other venue that may be applicable to such action. This Order excludes the application of the United Nations Convention on Contracts for the International Sale of Goods.

12. FORCE MAJEURE: Except for Buyer's obligations to pay sums to Seller when due, neither party shall be liable for its failure to perform obligations under the Order if such failure results from fire, flood, earthquake, storm, hurricane or other natural disaster, war, invasion, act of foreign enemies, rebellion, terrorist activities, nationalization, government sanction, blockage, embargo, or interruption or failure of electricity, water, telephone or utility service.

13. ASSIGNMENT: Buyer shall not assign the Order without the prior written consent of Seller, and such consent shall not be unreasonably withheld; however, any assignment shall not relieve Buyer of its payment and indemnity obligations to Seller.

14. ENFORCEABILITY: Should a court of competent jurisdiction rule that any provision herein is invalid or unenforceable, such ruling shall not affect the validity or enforceability of any other provision.

15. WAIVER: Seller's failure to enforce any provisions herein shall not constitute a waiver of such rights, or preclude their later enforcement.

16. WAIVER OF CONSEQUENTIAL DAMAGES: SELLER SHALL NOT BE LIABLE FOR PUNITIVE, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING, BUT NOT LIMITED TO, LIABILITY FOR REMOVAL AND REINSTALLATION COSTS, LOSS OF USE, LOSS OF BUSINESS OPPORTUNITY, LOSS OF PROFIT OR REVENUE, LOSS OF PRODUCT OR OUTPUT, OR BUSINESS INTERRUPTION.

17. LIMITATION OF LIABILITY: ANYTHING TO THE CONTRARY CONTAINED IN THIS ORDER NOTWITHSTANDING, SELLER'S CUMULATIVE LIABILITY ARISING OUT OF OR IN ANY MANNER RELATED TO ITS PERFORMANCE SHALL NOT EXCEED, IN THE AGGREGATE, ONE HUNDRED PERCENT (100%) OF THE MONIES RECEIVED BY SELLER UNDER THIS ORDER. THE REMEDIES PROVIDED TO BUYER UNDER THIS ORDER ARE IN LIEU OF ALL OTHER REMEDIES WHICH MAY BE OR BECOME AVAILABLE TO BUYER AT LAW OR IN EQUITY. THE LIMITATIONS SET FORTH HEREIN APPLY WHETHER CLAIMS ARISE PURSUANT TO CONTRACT, TORT, INDEMNITY, STATUTE, EQUITY OR ANY OTHER THEORY OF LAW, INCLUDING, BUT NOT LIMITED TO, THE BREACH OF ANY LEGAL DUTY OR THE FAULT, NEGLIGENCE, PROFESSIONAL LIABILITY OR STRICT LIABILITY OF SELLER. THIS LIMITATION SHALL BE INCLUSIVE OF ALL INSURANCE, BOND, AND LETTER OF CREDIT PROCEEDS, WHICH MAY BE PAID TO THE BUYER BY THE INSURERS, SURETIES OR BANKS OF SELLER. SHOULD THESE REMEDIES BE FOUND INADEQUATE OR TO HAVE FAILED IN THEIR ESSENTIAL PURPOSE FOR ANY REASON WHATSOEVER, THEN THE BUYER AGREES THAT THE SELLER'S RETURN TO THE BUYER OF NO GREATER THAN ONE HUNDRED PERCENT (100%) OF THE MONIES RECEIVED BY SELLER UNDER THIS ORDER SHALL PREVENT THE REMEDIES FROM FAILING THEIR ESSENTIAL PURPOSE AND SHALL BE CONSIDERED BY BUYER AS A FAIR AND ADEQUATE REMEDY.

18. ENTIRE AGREEMENT: This Order contains the entire agreement of the parties and supersedes any and all prior course of dealing, agreements, understandings and communications between Buyer and Seller related to the subject matter of this Order. No amendment or modification of this Order shall be binding unless it is in writing and is signed by an authorized representative of Buyer and Seller.



The Zeeco Difference

Our only business is the combustion business. By concentrating on what we do best, Zeeco has grown into a worldwide leader in combustion solutions. We are a privately held company whose ownership stays highly involved in daily operations, with upper management comprised of the world's leading combustion experts.

When you call Zeeco, we answer. When you make a request, you get a quick, efficient response. We are lean and efficient, able to make decisions quickly, without bureaucracy and red tape. Our sales, engineering, and purchasing groups work hand-in-hand to deliver highly competitive quotes and heroic turnaround times. We stand ready and willing to travel anywhere in the world to discuss upcoming projects firsthand, and to ensure that every existing project runs seamlessly.



Visit zeeco.com/contact for additional Global Location contact information



Choose to work with our dedicated, flexible, and innovative team, and you won't be disappointed. Call or email us today to request a quote or to learn more about our proprietary combustion systems.

Combustion Rentals & Rapid Response Group
Flare Division
22151 E 91st St
Broken Arrow, OK 74014

Learn more at Zeeco.com

✉ sales@zeeco.com

☎ +1 (918) 258 8551



REGISTERED
ISO 9001: 2015

Certification applies to
Zeeco Headquarters.



Emissions

Client:	Kaiser Frontier Midstream	Zeeco Ref.: SO 83737	Date:	21-Apr-26
Location:	Jal, NM	Client Ref.: Calvary Expansion VCU	Rev.	AS SOLD

To whom it may concern,

Expected emissions for the combustion system provided under Zeeco Reference SO 83737, when operated and maintained in accordance with the design basis and accepted industry standard practices for this type of equipment, are as follows:

- Hydrocarbon Destruction Removal Efficiency (DRE): $\geq 99\%$
- NO_x emissions: 0.12 lb/MMBtu
- CO emissions: 0.12 lb/MMBtu

Sincerely,

Wes Kirk
wes_kirk@zeeco.com
Applications Engineer

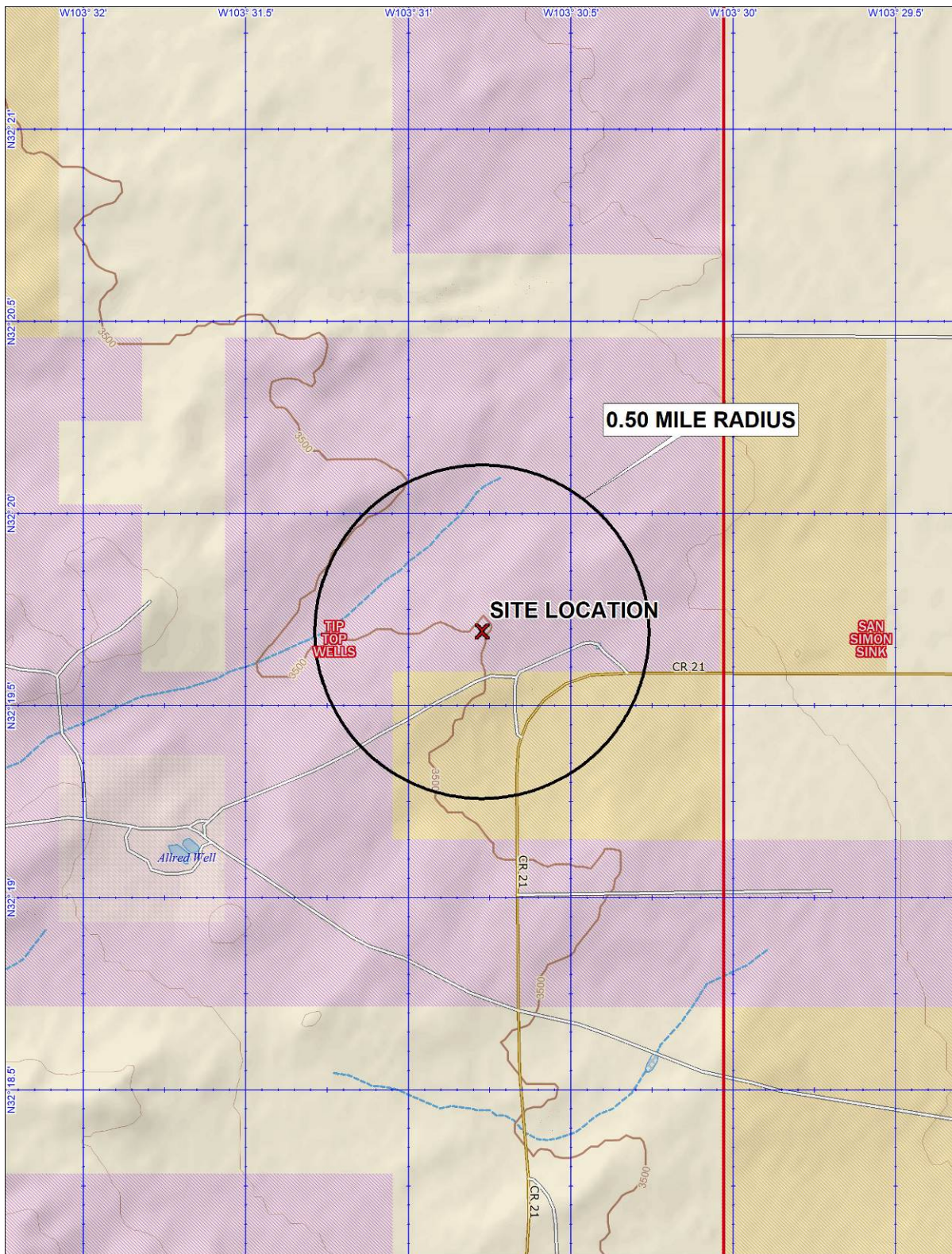
Section 8

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	

The map is provided on the following page.



Data use subject to license.

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www.delorme.com



525 CENTRAL PARK Dr.
SUITE 500
OKLAHOMA CITY, OK 73105

www.altamira-us.com

FIGURE TITLE

AREA MAP

DOCUMENT TITLE

NSR APPLICATION

CLIENT

KAISER-FRANCIS OIL COMPANY

LOCATION

**CAVALRY COMPRESSOR STATION
LEA COUNTY, NEW MEXICO**

DATE 7/1/2026

SCALE AS SHOWN

DESIGNED BY AD

APPROVED BY LWL

DRAWN BY AD

PROJECT NUMBER

KFOANM2601

FIGURE NUMBER

SECTION 8

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.
-

NOTICE OF AIR QUALITY PERMIT APPLICATION

Kaiser-Francis Oil Company announces its application submittal to the New Mexico Environment Department for an air quality permit for the modification of its Cavalry Compressor Station. The expected date of application submittal to the Air Quality Bureau is July 13, 2026.

The exact location for the facility is at latitude 32.328221 and longitude -103.512877. The approximate location of this facility is 20.4 miles west southwest of Eunice in Lea County.

The proposed revision consists of removing two (2) enclosed combustors (COMB-2-3), removing one (1) 60 MMscfd glycol dehydration unit (DEHY-1), removing one (1) 2.0 MMBtu/hr glycol reboiler (RB-1), adding one (1) 65 MMscfd/20 gpm glycol dehydration unit (DEHY), adding one (1) 1.25 MMBtu/hr glycol reboiler (RB-GLY), adding one (1) 65 MMscfd/950 gpm amine unit (AMINE), adding two (2) 38.9 MMBtu/hr amine reboilers (RB-AM1, RB-AM2), and adding one (1) Vapor Combustion unit (VCU). No other changes are proposed.

The estimated maximum quantities of any regulated air contaminants will be as follows in pound per hour (pph) and tons per year (tpy). These reported emissions could change slightly during the course of the Department's review:

Pollutant:	Pounds per hour	Tons per year
Particulate Matter (PM)	4.0	12.0
PM ₁₀	4.0	12.0
PM _{2.5}	4.0	12.0
Sulfur Dioxide (SO ₂)	13.0	56.0
Nitrogen Oxides (NO _x)	25.0	106.0
Carbon Monoxide (CO)	25.0	108.0
Volatile Organic Compounds (VOC)	237.0	117.0
Total sum of all Hazardous Air Pollutants (HAPs)	10.0	20.0
Toxic Air Pollutant (TAP)	n/a	n/a
Green House Gas Emission as Total CO ₂ e	n/a	339,134

The standard and maximum operating schedules of the facility will be 24 hours per day, 7 days a week and a maximum of 52 weeks per year.

The owner/operator of the Facility is: Kaiser-Francis Oil Company, PO Box 21468, Tulsa, OK 74121

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 site 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.

Atención

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Notice of Non-Discrimination

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Affidavit of Publication

STATE OF NEW MEXICO
COUNTY OF LEA

I, Daniel Russell, Publisher of the Hobbs News-Sun, a newspaper published at Hobbs, New Mexico, solemnly swear that the clipping attached hereto was published in the regular and entire issue of said newspaper, and not a supplement thereof for a period of 1 issue(s).

Beginning with the issue dated
July 12, 2026
and ending with the issue dated
July 12, 2026.



Publisher

Sworn and subscribed to before me this
12th day of July 2026.



Business Manager

My commission expires
January 29, 2027

(Seal)

STATE OF NEW MEXICO
NOTARY PUBLIC
GUSSIE RUTH BLACK
COMMISSION # 1087526
COMMISSION EXPIRES 01/29/2027

This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937 and payment of fees for said publication has been made.

LEGALS
July 12, 2026

NOTICE OF AIR QUALITY PERMIT APPLICATION

Kaiser-Francis Oil Company announces its application submittal to the New Mexico Environment Department for an air quality permit for the modification of its Cavalry Compressor Station. The expected date of application submittal to the Air Quality Bureau is July 13, 2026.

The exact location for the facility is at latitude 32.328221 and longitude -103.512877. The approximate location of this facility is 20.4 miles west southwest of Eunice in Lea County.

The proposed revision consists of removing two (2) enclosed combustors (COMB-2-3), removing one (1) 65 MMscfd glycol dehydration unit (DEHY-1), removing one (1) 2.0 MMBtu/hr glycol reboiler (RB-1), adding one (1) 65 MMscfd/20 gpm glycol dehydration unit (DEHY), adding one (1) 1.25 MMBtu/hr glycol reboiler (RB-GLY), adding one (1) 65 MMscfd/950 gpm amine unit (AMINE), adding two (2) 38.9 MMBtu/hr amine reboilers (RB-AM1, RB-AM2), and adding one (1) Vapor Combustion unit (VCU). No other changes are proposed.

The estimated maximum quantities of any regulated air contaminants will be as follows in pound per hour (pph) and tons per year (tpy). These reported emissions could change slightly during the course of the Department's review:

Pollutant:	Pounds per hour	Tons per year
Particulate Matter (PM)	4.0	12.0
PM10	4.0	12.0
PM2.5	4.0	12.0
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Nitrogen Oxides (NOx)	25.0	106.0
Carbon Monoxide	25.0	108.0
Volatile Organic Compounds (VOC)	237.0	117.0
Total sum of all Hazardous Air Pollutants (HAPs)	10.0	20.0
Toxic Air Pollutant (TAP)	n/a	n/a
Green House Gas Emission as Total CO2e	n/a	339,134

The standard and maximum operating schedules of the facility will be 24 hours per day, 7 days a week and a maximum of 52 weeks per year.

The owner/operator of the Facility is: Kaiser-Francis Oil Company, PO Box 21468, Tulsa, OK 74121

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.

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#00312948

67111991

00312948

ATTN: IRIS DRAKE
ALTAMIRA-US, LLC
525 CENTRAL PARK DR, STE 500
OKLAHOMA CITY, OK 73105

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Business Manager

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Nitrogen Oxides (NO _x)	25.0	106.0
Carbon Monoxide (CO)	25.0	108.0
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Toxic Air Pollutant (TAP)	n/a	n/a
Green House Gas Emission as Total CO ₂ e	n/a	339,134

The standard and maximum operating schedules of the facility will be 24 hours per day, 7 days a week and a maximum of 52 weeks per year.

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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.

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67111991

00312951

ATTN: IRIS DRAKE
ALTAMIRA-US, LLC
525 CENTRAL PARK DR, STE 500
OKLAHOMA CITY, OK 73105

General Posting of Notices – Certification

I, _____, the undersigned, certify that on _____, posted a true and correct copy of the attached Public Notice in the following publicly accessible and conspicuous places in, or near, **Eunice, Lea** County, state of New Mexico on the following dates:

1. Kaiser-Francis Oil Company
 Cavalry Compressor Station
 Date: _____
2. Eunice Post Office
 1201 Avenue K
 Eunice, NM 88231
 Date: _____
3. Eunice Public Library
 1003 Avenue N
 Eunice, NM 88231
 Date: _____
4. Eunice City Hall
 1106 Avenue J
 Eunice, NM 88231
 Date: _____

Signed this ____ day of _____.

Signature

Date

Printed Name

Title

Submittal of Public Service Announcement – Certification

I, Angie Dawson, the undersigned, certify that on July 9, 2026, submitted a public service announcement to **KZOR - KIXN- KPZA -KEJL - KYKK/KOOL FM Radio** that serves the City\Town\Village of **Malaga and the surrounding areas**, Lea County, New Mexico, in which the source is or is proposed to be located and that **KZOR Radio** has responded that it will air the announcement.

Signed this 9th day of July, 2026,



Signature

07/9/2026

Date

Angie Dawson

Printed Name

Consultant

Title {APPLICANT OR RELATIONSHIP TO APPLICANT}

Angie Dawson

From: Angie Dawson
Sent: Friday, July 10, 2026 7:51 AM
To: 'Aaron Forrister'
Cc: Laura Worthen-Lodes
Subject: RE: PSA Needed 7/12/2026

Yes please proceed with Monday. Thank you!

Angie Dawson

Air Quality Technician | 405-317-0942 | [altamira-us.com](mailto:angie@altamira-us.com)

From: Aaron Forrister <aaron@noalmark.com>
Sent: Thursday, July 9, 2026 10:42 PM
To: Angie Dawson <Angie.Dawson@altamira-us.com>
Subject: Re: PSA Needed 7/12/2026

Hi Angie! We can air it on Monday. If that's ok....
It will air on KZOR.

Get [Outlook for Android](#)

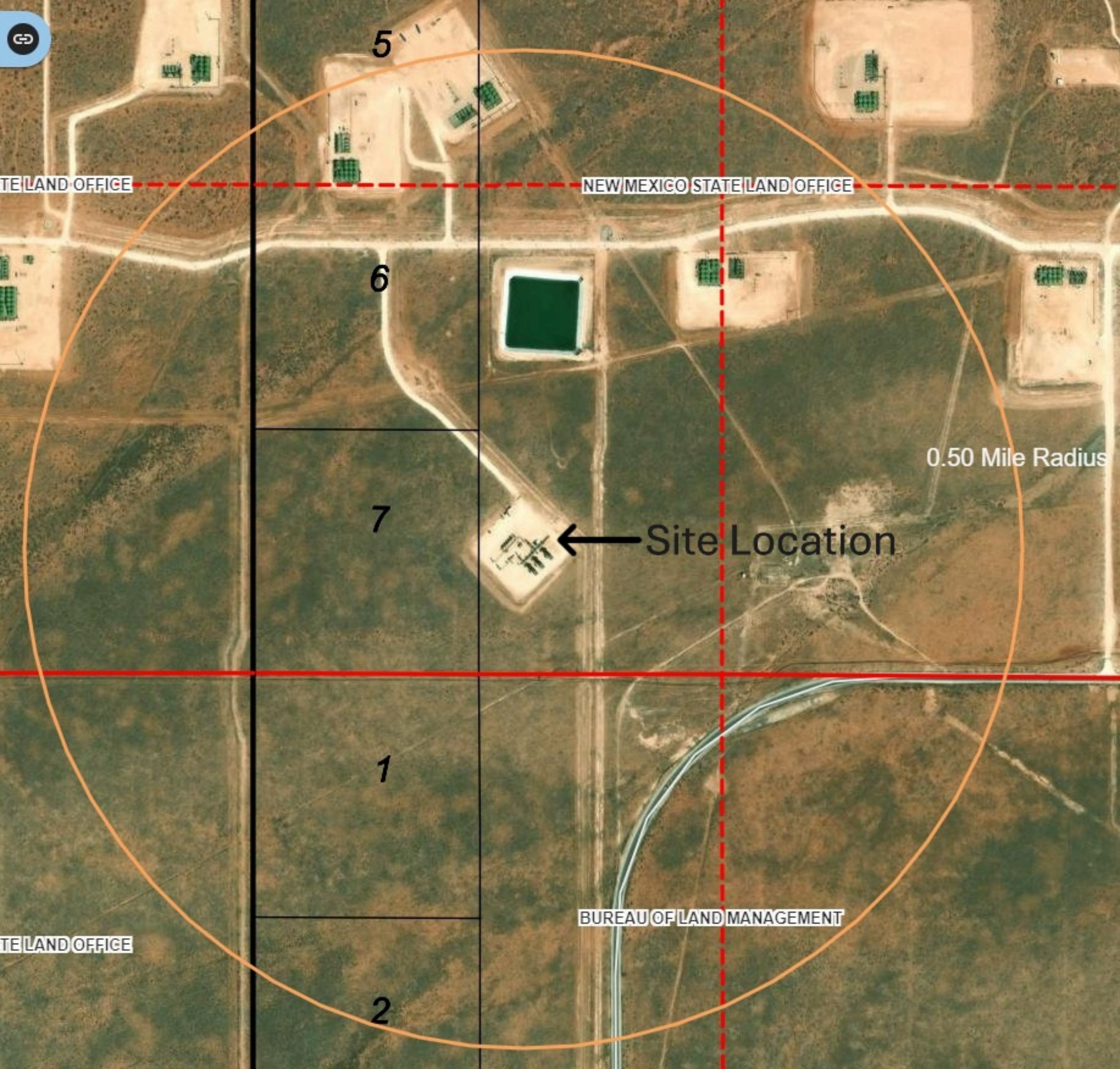
From: Angie Dawson <Angie.Dawson@altamira-us.com>
Sent: Thursday, July 9, 2026 1:01:50 PM
To: Aaron Forrister <aaron@noalmark.com>
Cc: Laura Worthen-Lodes <Laura.Worthen-Lodes@Altamira-US.com>
Subject: PSA Needed 7/12/2026

Hi Aaron,
We are needing another PSA aired. Please see the attached. We are aiming for the public notice to be published on July 12, 2026. If you can meet that date, that would be great. If not, let me know your first available date to air. We only need to air one time

Angie Dawson

Air Quality Technician | 405-317-0942 | [altamira-us.com](mailto:angie@altamira-us.com)
525 Central Park Dr., Suite 500
Oklahoma City, OK 73105





STATE LAND OFFICE

NEW MEXICO STATE LAND OFFICE

0.50 Mile Radius

← Site Location

BUREAU OF LAND MANAGEMENT

STATE LAND OFFICE

1:9,028

0 0.05 0.1 0.2 mi

0 0.1 0.2 0.4 km

Esri, HERE, Garmin, IPC, Vantor

Parcel Details

OWNER NUMBER:218459

UPC CODE:4198133261265

PARCEL NUMBER:4951223094129

Owner Information	
Owner:	NEW MEXICO STATE LAND OFFICE
Mailing Address:	
Property Address:	

Subdivision Information	
Name:	
Unit:	
Block:	
Lot:	

Legal Information	

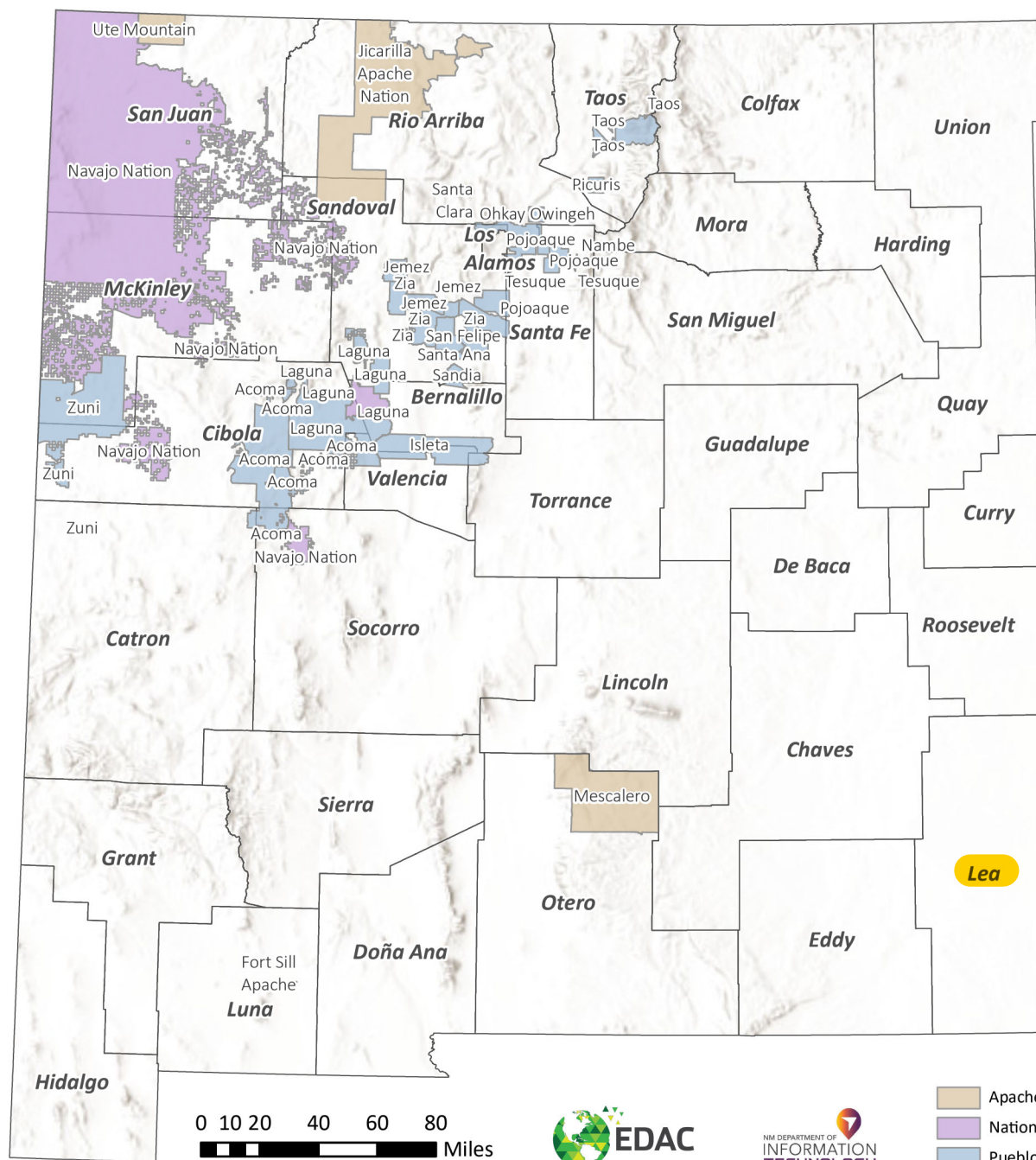
Other Information			
Taxable Value:	\$31407	Deed Book:	
Exempt Value:	\$31407	Deed Page:	0
Net Value:	\$0	District:	080
Livestock Value:	\$0	Section:	06
Manufactured Home Value:	\$0	Township:	23
Personal Property:	\$0	Range:	34
Land Value:	\$94221	Date Filed:	0
Improvement Value:	\$0	Most Current Tax:	0
Full Value:	\$94221	Year Recorded:	

Square Foot and Year Built listed only to be used for comparative purposes, NOT to be used for commerce.

Building Information			
Year Built:		Number of Stories:	
Basement SQFT:		First Floor SQFT:	
Second Floor SQFT:			

Lea County, New Mexico Disclaimer Information deeded reliable but not guaranteed. Copyright © 2023 MAP TO BE USED FOR TAX PURPOSES ONLY. NOT TO BE USED FOR CONVEYANCE.

Tribal Areas Within New Mexico, 2021

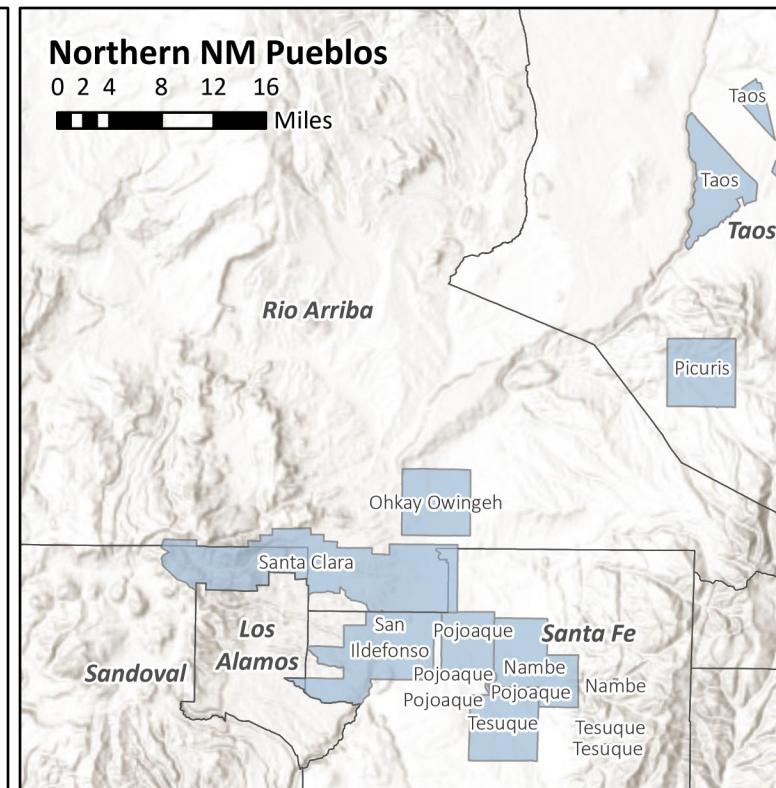


Map produced by: Earth Data Analysis Center; Data Sources: US Census, RGIS; Base map: "World Topographic Map" and "World Hillshade", by Esri, NASA, NGA, USGS, New Mexico State University, Texas Parks & Wildlife, HERE, Garmin, SafeGraph, METI/NASA, Bureau of Land Management, EPA, NPS, USDA

Northern NM Pueblos

0 2 4 8 12 16

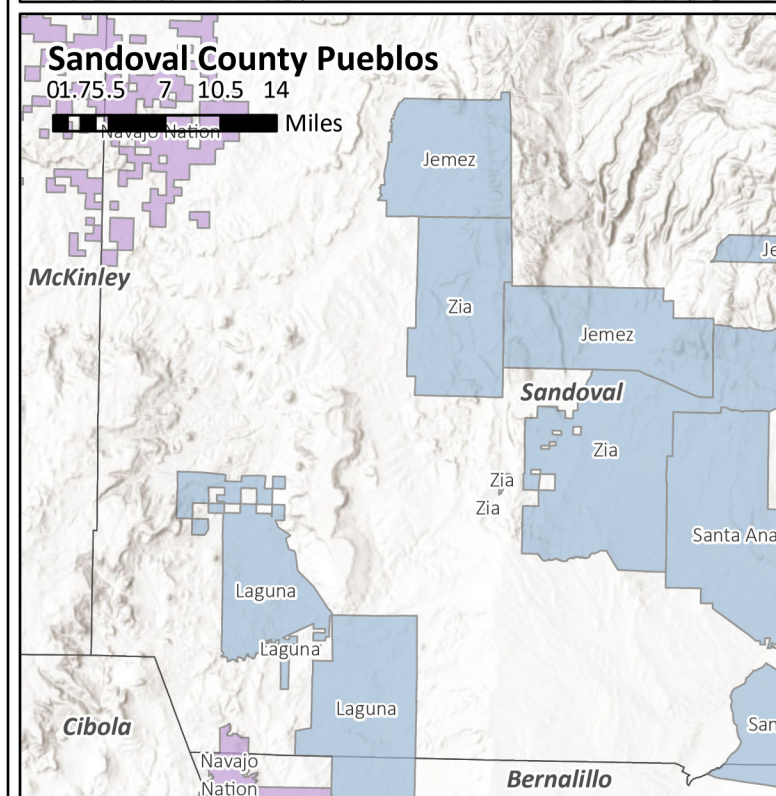
Miles



Sandoval County Pueblos

0 1.75 5 7 10.5 14

Miles



Notice To Landowners

1. Bureau of Land Management
2. City of Eunice
3. Lea County
4. NM State Land Office

July 12, 2026

CERTIFIED MAIL 9589 0710 5270 2048 0851 14

New Mexico Bureau of Land
Management
Carlsbad Field Office
620 E Green St.
Carlsbad, NM 88220

Dear Madam/Sir,

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The exact location for the facility, known as the Calvary Compressor Station, is at latitude 32.328221°N and longitude -103.512877°W (decimal degrees, WGS 84). The approximate location of this facility is 20.4 miles west-southwest of Eunice, NM in Lea County.

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The station's estimated maximum quantities of any regulated air contaminants will be as follows in pounds per hour and tons per year and may change slightly during the course of the Department's review:

	Pounds Per Hour	Tons Per Year
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Volatile Organic Compounds (VOCs)	237.0	117.0
Particulate Matter Less Than 10 Microns (PM10)	4.0	12.0
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Total Sum of all Hazardous Air Pollutants (HAPs)	10.0	20.0
Green House Gas Emissions as Total CO ₂ e	N/A	339,134

The standard and maximum operating schedules for the station will be 24 hours per day, 7 days per week, and a maximum of 52 weeks per year.

If you have any comments about the construction or operation of this facility, and 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 or questions may be submitted verbally. (505) 476-4300; 1 800 224-7009.

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Sincerely,

Chris Jones

Chris Jones
Air Quality Engineer
Kaiser Francis Oil Company
P.O. Box 21468
Tulsa, OK 74121

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July 12, 2026

CERTIFIED MAIL 9589 0710 5270 2048 0850 91

City of Eunice
Candy Birto, City Clerk
1107 Avenue J
Eunice, NM 88231

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Sincerely,

Chris Jones

Chris Jones
Air Quality Engineer
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July 12, 2026

CERTIFIED MAIL 9589 0710 5270 2048 0851 07

Lea County New Mexico
Carrie Sandoval, Lea County Clerk
100 N. Main Avenue, 1C
Lovington, NM 88260

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Particulate Matter Less Than 2.5 Microns (PM2.5)	4.0	12.0
Total Sum of all Hazardous Air Pollutants (HAPs)	10.0	20.0
Green House Gas Emissions as Total CO ₂ e	N/A	339,134

The standard and maximum operating schedules for the station will be 24 hours per day, 7 days per week, and a maximum of 52 weeks per year.

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.

Atencion

Este es un aviso de la Agencia de Calidad de Aire del Departamento de Medio Ambiente de Nuevo México, acerca de las emisiones producidas por un establecimiento en esta área. Si usted desea información en español, por favor de comunicarse con la oficina de Calidad de Aire al teléfono 505-629-7748.

Sincerely,

Chris Jones

Chris Jones
Air Quality Engineer
Kaiser Francis Oil Company
P.O. Box 21468
Tulsa, OK 74121

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: 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.

July 12, 2026

CERTIFIED MAIL 9589 0710 5270 2048 0851 21

New Mexico State Land Office
Oil, Gas and Minerals Division
Allison Marks, Director
310 Old Santa Fe Trail
Santa Fe, NM 87501

Dear Madam/Sir,

According to New Mexico Environment Department (NMED) air quality regulations, Kaiser-Francis Oil Company (KFOC) must announce its intent to submit an application to revise the air quality permit for its Calvary Compressor Station. The expected date of application submittal to the Air Quality Bureau is during the week of 7/13/2026.

The exact location for the facility, known as the Calvary Compressor Station, is at latitude 32.328221°N and longitude -103.512877°W (decimal degrees, WGS 84). The approximate location of this facility is 20.4 miles west-southwest of Eunice, NM in Lea County.

The proposed revision consists of removing two (2) enclosed combustors (COMB-2-3), one (1) 60 MMscfd glycol dehydration unit (DEHY-1), and one (1) 2.0 MMBtu/hr glycol reboiler (RB-1) along with adding one (1) 65 MMscfd/20 gpm glycol dehydration unit (DEHY), one (1) 1.25 MMBtu/hr glycol reboiler (RB-GLY), one (1) 65 MMscfd/950 gpm amine unit (AMINE), two (2) 38.9 MMBtu/hr amine reboilers (RB-AM1, RB-AM2), and one (1) Vapor Combustion Unit (VCU). No other permit changes are proposed.

The station's estimated maximum quantities of any regulated air contaminants will be as follows in pounds per hour and tons per year and may change slightly during the course of the Department's review:

	Pounds Per Hour	Tons Per Year
Nitrogen Oxides (NOX)	25.0	106.0
Carbon Monoxide (CO)	25.0	108.0
Sulfur Dioxide (SO ₂)	13.0	56.0
Volatile Organic Compounds (VOCs)	237.0	117.0
Particulate Matter Less Than 10 Microns (PM10)	4.0	12.0
Particulate Matter Less Than 2.5 Microns (PM2.5)	4.0	12.0
Total Sum of all Hazardous Air Pollutants (HAPs)	10.0	20.0
Green House Gas Emissions as Total CO ₂ e	N/A	339,134

The standard and maximum operating schedules for the station will be 24 hours per day, 7 days per week, and a maximum of 52 weeks per year.

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,

Chris Jones

Chris Jones
Air Quality Engineer
Kaiser Francis Oil Company
P.O. Box 21468
Tulsa, OK 74121

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Carlsbad Office 1620 E. Green St
Carlsbad NM 88220

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Sent To

New Mexico State Land Office
211.6th & Minerals Div. Allison Marks
310 Old Santa Fe Trl. Santa Fe 87501

PS Form 3800, January 2023 PSN 7530-02-000-9047 See Reverse for Instructions

7/12/26
KFDANM2601

Section 10

Written Description of the Routine Operations of the Facility

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

Natural gas from surrounding wellpads and tank batteries are transported via pipeline to the inlet slug catcher for separation.

Liquids from the slug catcher are sent to the gunbarrel separator (GB-1). Flash emissions from the gunbarrel are captured by the vapor recovery unit (VRU) or routed to the enclosed combustor (COMB-1) during periods of VRU downtime.

Oil from the gunbarrel is sent to the oil storage tanks (TANK-1-3). Flashing, working, and breathing emissions are captured by the vapor recovery unit (VRU) or routed to the enclosed combustor (COMB-1) during periods of VRU downtime. Oil is transported offsite via pipeline during normal operations. In case of pipeline downtime the oil is loaded into tank trucks and transported offsite (LOAD-1) along an unpaved haul road (HR-1). Emissions calculations conservatively assume 100% pipeline downtime.

Water from the gunbarrel is sent to the water storage tank (PWTK-1). Flashing, working, and breathing emissions are captured by the vapor recovery unit (VRU) or routed to the enclosed combustor (COMB-1) during periods of VRU downtime. Water is loaded into tank trucks and transported offsite (LOAD-2) along an unpaved haul road (HR-1).

Gas from the slug catcher is compressed by five (5) natural gas fired compressor engines (ENG-1-5) and prior to entering the inlet of the amine unit (AMINE). The compressor engines are fueled by residue gas from offsite.

The amine unit (AMINE) routes gas through the contactor tower where the gas makes contact with a lean water MDEA solution that removes carbon dioxide (CO₂) and hydrogen sulfide from the gas and entrains it. Treated gas flows out of the absorber and to the inlet of the glycol dehydrator (DEHY). The rich amine flows to a flash vessel where some of the entrained gas is liberated. The flash vapors are routed to the vapor combustion unit (VCU). The amine then flows to the still where the reboilers operate in tandem (RB-AM1, RB-AM2) liberate any remaining entrained gas. The entrained gas is routed to a condenser where any MDEA is condensed and removed from the gas stream. The condenser vapors are routed to the VCU. MDEA from the still and condenser is now routed as lean amine to top of the contactor tower. The reboilers are fired by residue gas.

The dehy unit (DEHY) routes gas through the contactor tower where the gas makes contact with lean triethylene glycol (TEG) that removes water from the gas and entrains it. Treated gas flows out of the absorber and to sales pipeline. The rich TEG flows to a flash vessel where some of the entrained gas is liberated. The flash vapors are routed to the vapor combustion unit (VCU). The TEG then flows to the still where the reboiler (RB-GLY) liberates any remaining entrained gas. The entrained gas is routed to a condenser where any TEG is condensed and removed from the gas stream before being recirculated back to the top of the contactor tower. The condenser vapors are routed to the VCU. Water from condenser is routed to the inlet slug catcher. The reboiler is fired by residue gas.

The enclosed combustor (COMB-1) is used to destroy VOC and HAP emissions from the gunbarrel and storage tanks. The combustor is equipped with a continuously burning pilot fired by residue gas.

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):

There are no other sources within 0.25 miles of Cavalry Compressor Station.

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

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

☐ Yes ☒ No

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

☐ Yes ☒ No

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

☐ Yes ☒ No

C. Make a determination:

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

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

Section 12

Section 12.A

PSD Applicability Determination for All Sources

(Submitting under 20.2.72, 20.2.74 NMAC)

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

A. This facility is:

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

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

- a. NOx: **95.78** TPY
- b. CO: **97.53** TPY
- c. VOC: **100.33** TPY
- d. SOx: **50.10** TPY
- e. PM: **8.25** TPY
- f. PM10: **8.25** TPY
- g. PM2.5: **8.24** TPY
- h. Fluorides: **0** TPY
- i. Lead: **0** TPY
- j. Sulfur compounds (listed in Table 2): **0.26** TPY
- k. GHG: **308,303** TPY

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 RELEVANT 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/>

To save paper and to standardize the application format, delete this sentence, and begin your submittal for this attachment on this page.

Example of a 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	If subject, this would normally apply to the entire facility. If your entire facility or individual pieces of equipment are subject to emissions limits in a permit or numerical emissions standards in a federal or state regulation, this applies. This would not apply to Notices of Intent since these are not permits.
20.2.23 NMAC	Fugitive Dust Control	No	Facility	This regulation may apply if, this is an application for a notice of intent (NOI) per 20.2.73 NMAC, if the activity or facility is a fugitive dust source listed at 20.2.23.108.A NMAC, and if the activity or facility is located in an area subject to a mitigation plan pursuant to 40 CFR 51.930. As of January 2019, the only areas of the State subject to a mitigation plan per 40 CFR 51.930 are in Doña Ana and Luna Counties. Sources exempt from 20.2.23 NMAC are activities and facilities subject to a permit issued pursuant to the NM Air Quality Control Act, the Mining Act, or the Surface Mining Act (20.2.23.108.B NMAC). 20.2.23.108 APPLICABILITY: A. This part shall apply to persons owning or operating the following fugitive dust sources in areas requiring a mitigation plan in accordance with 40 CFR Part 51.930: (1) disturbed surface areas or inactive disturbed surface areas, or a combination thereof, encompassing an area equal to or greater than one acre; (2) any commercial or industrial bulk material processing, handling, transport or storage operations. B. The following fugitive dust sources are exempt from this part: (1) agricultural facilities, as defined in this part; (2) roadways, as defined in this part; (3) operations issued permits pursuant to the state of New Mexico Air Quality Control Act, Mining Act or Surface Mining Act; and (4) lands used for state or federal military activities. [20.2.23.108 NMAC - N, 01/01/2019]
20.2.33 NMAC	Gas Burning Equipment - Nitrogen Dioxide	No	N/A	All natural gas-fired equipment have heat inputs of less than 1,000,000 MMBtu/yr. This section does not apply.
20.2.34 NMAC	Oil Burning Equipment: NO ₂	No	N/A	There is no oil burning equipment at the facility.
20.2.35 NMAC	Natural Gas Processing Plant – Sulfur	No	N/A	No Sulfur Recovery Unit is present at the facility.

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.)
20.2.37 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	TANK-1-3	20.2.38.109 – all tank vapors are controlled by a closed vent system and flare 20.2.38.110 – tanks are not located within a municipality 20.2.38.111 – tanks are not located within 5 miles of a municipality with a population greater than 20,000 20.2.38.112 – all tank vapors are controlled by a closed vent system and flare. 20.2.38.113 – tanks are not located within 5 miles of a municipality with a population greater than 20,000
20.2.39 NMAC	Sulfur Recovery Plant - Sulfur	No	N/A	There are no sulfur recovery plants at this facility.
20.2.50 NMAC	Oil and Gas Sector – Ozone Precursor Pollutants	Yes	ENG-1-5, COMB-1, VCU, TANK-1-3, DEHY, RB-AM1-2, 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 below: Include the construction status of applicable units as “New”, “Existing”, “Relocation of Existing”, or “Reconstructed” as defined by this Part in your justification: Check the box for the subparts that are applicable: ☒ 113 – Engines and Turbines ENG-1-5: Existing ☒ 114 – Compressor Seals ENG-1-5: Existing ☒ 115 – Control Devices and Closed Vent Systems COMB-1: Existing TO-1: New ☒ 116 – Equipment Leaks and Fugitive Emissions FUG: Existing ☐ 117 – Natural Gas Well Liquid Unloading ☒ 118 – Glycol Dehydrators DEHY: New ☒ 119 – Heaters RB-AM1-2: New ☐ 120 – Hydrocarbon Liquid Transfers ☒ 121 – Pig Launching and Receiving SSM: New ☐ 122 – Pneumatic Controllers and Pumps ☒ 123 – Storage Vessels TANK-1-3: Existing ☐ 124 – Well Workovers ☐ 125 – Small Business Facilities ☐ 126 – Produced Water Management Unit ☐ 127 – Flowback Vessels and Preproduction Operations
20.2.61.109 NMAC	Smoke & Visible Emissions	Yes	ENG-1-5, COMB-1, VCU, RB-AM1-2,	This regulation that limits opacity to 20% applies to Stationary Combustion Equipment, such as engines, boilers, heaters, and flares unless your equipment is subject to another state regulation that limits particulate matter such as 20.2.19 NMAC (see 20.2.61.109 NMAC). If equipment at your facility was subject to the repealed regulation 20.2.37 NMAC it is now subject to 20.2.61 NMAC.

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.)
			RB-GLY	
20.2.70 NMAC	Operating Permits	No	Facility	If subject, this would normally apply to the entire facility. Applies if your facility's potential to emit (PTE) is 100 tpy or more of any regulated air pollutant other than HAPs; and/or a HAPs PTE of 10 tpy or more for a single HAP or 25 or more tpy for combined HAPs; is subject to a 20.2.79 NMAC nonattainment permit; or is a facility subject to a federal regulation that requires you to obtain a Title V permit such as landfills or air curtain incinerators. Include both stack and fugitive emissions to determine the HAP's PTE regardless of the facility type. If your facility is one of those listed at 20.2.70.7(2)(a) through (aa) state which source type your facility is and count both fugitive and stack emissions to determine your PTE. If your facility is not in this (a) through (aa) list, count only stack emissions to determine your PTE. Landfills and Air Curtain Incinerators are not Title V Major Sources, but it would apply pursuant to 20.2.70.200.B NMAC.
20.2.71 NMAC	Operating Permit Fees	No	Facility	If subject to 20.2.70 NMAC and your permit includes numerical ton per year emission limits, you are subject to 20.2.71 NMAC and normally applies to the entire facility.
20.2.72 NMAC	Construction Permits	Yes	Facility	If subject, this would normally apply to the entire facility. Could apply if your facility's potential emission rate (PER) is greater than 10 pph or greater than 25 tpy for any pollutant subject to a state or federal ambient air quality standard (does not include VOCs or HAPs); if the PER of lead is 5 tpy or more; if your facility is subject to 20.2.72.400 NMAC; or if you have equipment subject to 40 CFR 60 Subparts I and OOO, 40 CFR 61 Subparts C and D. Include both stack and fugitive emissions to determine PER.
20.2.73 NMAC	NOI & Emissions Inventory Requirements	Yes	Facility	If subject, this would normally apply to the entire facility. A Notice of Intent application 20.2.73.200 NMAC could apply if your facility's PER of <u>any</u> regulated air pollutant, including VOCs and HAPs, is 10 tpy or more or if you have lead emissions of 1 tpy or more. Include both fugitive and stack emissions to determine your PER. You could be required to submit Emissions Inventory Reporting per 20.2.73.300 NMAC if your facility is subject to 20.2.73.200, 20.2.72, or emits more than 1 ton of lead or 10 tons of PM10, PM2.5, SOx, NOx CO, or VOCs in any calendar year. All facilities that are a Title V Major Source as defined at 20.2.70.7.R NMAC, are subject to Emissions Inventory Reporting.
20.2.74 NMAC	Permits – Prevention of Significant Deterioration (PSD)	No	Facility	Facility has PTE emissions less than PSD thresholds
20.2.75 NMAC	Construction Permit Fees	Yes	Facility	If subject, this would apply to the entire facility. It is not necessary to include each low level regulatory citation for this regulation. This regulation applies if you are submitting an application pursuant to 20.2.72, 20.2.73, 20.2.74, and/or 20.2.79 NMAC. If this is a 20.2.73 NMAC application it is subject to the filing fee at 20.2.75.10 NMAC. If this is a 20.2.72, 20.2.74, and/or 20.2.79 NMAC application it is subject to 20.2.75.10, 11 permit fee, and 11.E annual fees. You are not subject to the 75.11.E annual fees if you are subject to 20.2.71 NMAC.
20.2.77 NMAC	New Source Performance	Yes	ENG-1-5, AMINE RB-AM1-2,	The compressor engines (ENG-1-5) are subject to NSPS JJJJ. The amine unit (AMINE), fugitives (FUG), and compressors (ENG-4-5) are subject to NSPS OOOOb.

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.)
			FUG	The compressors (ENG-1-3) are subject to NSPS OOOOa. The amine reboilers (RB-AM1-2) are subject to NSPS Dc.
20.2.78 NMAC	Emission Standards for HAPS	No	N/A	There are no applicable units located at this facility.
20.2.79 NMAC	Permits – Nonattainment Areas	No	N/A	The facility is not located in a nonattainment area.
20.2.80 NMAC	Stack Heights	Yes	Facility	Facility is applying for a permit under 20.2.72 NMAC
20.2.82 NMAC	MACT Standards for source categories of HAPS	Yes	ENG-1-5, DEHY	The compressor engines are subject to NESHAP ZZZZ. The glycol dehydrator is subject to NESHAP HH.

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	If subject, this would normally apply to the entire facility. This applies if you are subject to 20.2.70, 20.2.72, 20.2.74, and/or 20.2.79 NMAC.
NSPS 40 CFR 60, Subpart A	General Provisions	Yes	ENG-1-5, AMINE, RB-AM1-2, FUG	The compressor engines (ENG-1-5) are subject to NSPS JJJJ. The amine unit (AMINE), fugitives (FUG), and compressors (ENG-4-5) are subject to NSPS OOOOb. The compressors (ENG-1-3) are subject to NSPS OOOOa. The amine reboilers (RB-AM1-2) are subject to NSPS Dc.
NSPS 40 CFR 60.40a, Subpart Da	Subpart Da, Performance Standards for Electric Utility Steam Generating Units	No	N/A	There are no applicable units located at this facility.

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 applicable units located at this facility.
40 CFR 60.40c, Subpart Dc	Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units	Yes	RB-AM1-2	The amine reboilers have a heat input greater than 10 MMBtu/hr and less than 100 MMBtu/hr and subject to this subpart.
NSPS 40 CFR 60, Subpart Ka	Standards of Performance for Storage Vessels for Petroleum Liquids for which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984	No	N/A	The storage tanks have a capacity of less than 20,000 gallons
NSPS 40 CFR 60, Subpart Kb	Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984	No	N/A	The storage tanks have a capacity of less than 20,000 gallons
NSPS 40 CFR 60.330 Subpart GG	Stationary Gas Turbines	No	N/A	There are no applicable units located at this facility.
NSPS 40 CFR 60, Subpart KKK	Leaks of VOC from Onshore Gas Plants	No	N/A	There are no applicable units located at this facility.
NSPS 40 CFR Part 60 Subpart LLL	Standards of Performance for Onshore Natural Gas Processing: SO₂ Emissions	No	AMINE	The amine unit (AMINE) will be constructed after August 23, 2011, and is therefore not subject to this subpart.

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	The facility was constructed after September 18, 2015, and is therefore not subject to this subpart.
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 December 6, 2022	Yes	ENG-1-3	The listed compressors were manufactured after September 18, 2015, and prior to December 6, 2022, and are subject to requirements under this part. The storage tanks have a federally enforceable limit of less than 6 tons per year which exempts them from this subpart.
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 December 6, 2022	Yes	ENG-4-5, AMINE, FUG	The listed equipment will be manufactured and/or modified after December 6, 2022, and subject to requirements under this subpart.
NSPS 40 CFR 60 Subpart IIII	Standards of performance for Stationary Compression Ignition Internal Combustion Engines	No	N/A	There are no applicable units located at this facility.
NSPS 40 CFR Part 60 Subpart JJJJ	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines	Yes	ENG-1-5	The compressor engines were manufactured after July 1, 2010, and are subject to requirements under this subpart. Specifically, the units are subject to the following emissions limits NOx: 1.0 g/hp-hr CO: 2.0 g/hp-hr VOC: 0.7 g/hp-hr
NSPS 40 CFR 60 Subpart TTTT	Standards of Performance for Greenhouse Gas Emissions for	No	N/A	There are no applicable units located at this facility.

Federal Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
	Electric 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	There are no applicable units located at this facility.
NSPS 40 CFR 60, Subparts WWW, XXX, Cc, and Cf	Standards of performance for Municipal Solid Waste (MSW) Landfills	No	N/A	There are no applicable units located at this facility.
NESHAP 40 CFR 61 Subpart A	General Provisions	No	N/A	There are no applicable units located at this facility.
NESHAP 40 CFR 61 Subpart E	National Emission Standards for Mercury	No	N/A	There are no applicable units located at this facility.
NESHAP 40 CFR 61 Subpart V	National Emission Standards for Equipment Leaks (Fugitive Emission Sources)	No	N/A	The fugitives are subject to 40 CFR 60 Subpart OOOOb and are only required to comply with that rule per 61.240(c).
MACT 40 CFR 63, Subpart A	General Provisions	Yes	ENG-1-5, DEHY	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	This facility is Subject to the requirements of 40 CFR 63 Subpart HH DEHY is has a federally enforceable limit of less than 1 TPY of Benzene, however, it is subject to HH recordkeeping and reporting requirements.
MACT 40 CFR 63 Subpart HHH		No	N/A	There are no applicable units located at this facility.
MACT 40 CFR 63 Subpart DDDDD	National Emission Standards for Hazardous Air Pollutants for Major Industrial, Commercial, and Institutional Boilers & Process Heaters	No	N/A	The facility is not a major source of HAP
MACT 40 CFR 63 Subpart UUUUU	National Emission Standards for Hazardous Air Pollutants Coal & Oil Fire Electric	No	N/A	There are no applicable units located at this facility.

Federal Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
	Utility Steam Generating Unit			
MACT 40 CFR 63 Subpart ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE MACT)	Yes	ENG-1-5	The compressor engines are subject to NESHAP ZZZZ and comply by complying with NSPS JJJJ.
40 CFR 64	Compliance Assurance Monitoring	No	N/A	The facility is not a Title V major source.
40 CFR 68	Chemical Accident Prevention	No	N/A	The facility does not process any regulated substance in 40 CFR 68.130 in sufficient amounts.
Title IV – Acid Rain 40 CFR 72	Acid Rain	No	N/A	This facility does not generate electricity
Title IV – Acid Rain 40 CFR 73	Sulfur Dioxide Allowance Emissions	No	N/A	This facility does not generate electricity
Title IV-Acid Rain 40 CFR 75	Continuous Emissions Monitoring	No	N/A	This facility does not generate electricity
Title IV – Acid Rain 40 CFR 76	Acid Rain Nitrogen Oxides Emission Reduction Program	No	N/A	This facility does not generate electricity
Title VI – 40 CFR 82	Protection of Stratospheric Ozone	No	N/A	There are no applicable units located at this facility.

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 performed according to guidelines, which dictate proper procedural sequence to minimize emissions from the facility during such activities.

Equipment located at the facility is equipped with various safety devices that aid in preventing excess emissions to the atmosphere in the event of an operational emergency. In the event of a malfunction, startup, shutdown, or scheduled maintenance in which emission rates from the facility exceed permitted allowable emissions, KFOC will notify the AQB in accordance with 20.2.7 NMAC and the equipment responsible for the exceedance will be repaired as soon as possible.

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.

Not applicable, as there are no alternative operating scenarios at this facility.

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.	X
New Minor Source or significant permit revision under 20.2.72 NMAC (20.2.72.219.D NMAC). See #1 above. Note: Neither modeling nor a modeling waiver is required for VOC emissions.	
Reporting existing pollutants that were not previously reported.	
Reporting existing pollutants where the ambient impact is being addressed for the first time.	
Title V application (new, renewal, significant, or minor modification. 20.2.70 NMAC). See #3 above.	
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.

July 1, 2026

Mr. Sufi Mustafa
New Mexico Environment Department
Air Quality Bureau
525 Camino de los Marquez, Suite 1
Santa Fe, New Mexico 87505-1816

**RE: Air Dispersion Modeling Protocol for Compressor Station
Kaiser-Francis Oil Company
Calvary Compressor Station**

Dear Mr. Mustafa:

Kaiser-Francis Oil Company is preparing a construction permit application to modify operations at Calvary Compressor Station. This protocol outlines the proposed air dispersion modeling techniques that will be used to assess impacts surrounding the facility. The facility is currently seeking authorization to remove existing combustors and glycol dehydration equipment and replacing it with upgraded dehydration equipment, amine treating, associated reboilers and a vapor combustion unit.

1.0 Introduction

Kaiser-Francis Oil Company owns and operates Calvary Compressor Station (Facility), which is located 20.3 miles SW of Eunice in Lea County, New Mexico. The Facility is a compressor station. Kaiser-Francis Oil Company seeks to remove two (2) enclosed combustors (COMB-2-3), one (1) 60 MMscfd glycol dehydration unit (DEHY-1), and one (1) 2.0 MMBtu/hr glycol reboiler (RB-1). Kaiser-Francis Oil Company also seeks to add one (1) 65 MMscfd/20 gpm glycol dehydration unit (DEHY), one (1) 1.25 MMBtu/hr glycol reboiler (RB-GLY), one (1) 65 MMscfd/950 gpm amine unit (AMINE), two (2) 38.9 MMBtu/hr amine reboilers (RB-AM1, RB-AM2), one (1) Vapor Combustion unit (VCU) and various support equipment and operations.

The modification results in the need for a construction permit and modeling has not been conducted for these new sources to demonstrate compliance with ambient air quality standards. Kaiser-Francis Oil Company seeks to demonstrate compliance with the New Mexico Ambient Air Quality Standards (NMAAQs), the National Ambient Air Quality Standards (NAAQS), as well as the PSD Class II Standards as applicable for CO, PM_{2.5}, PM₁₀, SO₂, H₂S, and NO₂ standards. The facility is located in the Air Quality Control Region 155 where the PSD minor source baseline data has been triggered for NO₂, SO₂, PM_{2.5} and PM₁₀.

2.0 Facility Description

Calvary Compressor Station is equipped to process and compress natural gas. Upon permit approval, the following sources will be permitted to operate at the facility:

- Five (5) Natural Gas-Fired Compressor Engines
- Three (3) 300-bbl Oil Tanks
- One (1) 300-bbl Produced Water Tank
- One (1) 400-bbl Gunbarrel Separator

- One (1) Glycol Reboiler
- Two (2) Amine Reboilers
- One (1) Enclosed Combustor
- One (1) Amine Dehydrator
- One (1) Glycol Dehydrator
- One (1) Vapor Combustion Unit
- Oil Truck Loading
- Water Truck Loading
- Unpaved Haul Road
- Malfunction Emissions
- Fugitive Emissions
- SSM Emissions

3.0 Facility Identification and Location

Kaiser-Francis Oil Company (Facility), which is located 20.3 miles SW of Eunice in Lea County, New Mexico. The UTM Coordinates of the facility are approximately 639,971 meters East and 3,577,789 meters North with NAD83 datum at an elevation of approximately 3,500 feet above mean sea level.

4.0 Model Input Options

We will use the latest version of BEEST AERMOD dispersion model, version 24142, for this analysis. NO_x impacts will be converted to NO₂ impacts using the Ambient Ratio Method 2 (ARM2). If an NO₂/NO_x ratio of less than 0.5 is used, justification will be provided. Default modeling inputs will be used for CO, PM_{2.5}, PM₁₀, SO₂, and H₂S.

Table 1 shows the emissions sources and stack parameters for the facility. Please note that emission may vary throughout the development of this application.

Table 1
Emissions Sources and Parameters

Source ID	Height (ft)	Temp (°F)	Velocity (fps)	Dia. (ft)	NO ₂ lb/hr	SO ₂ lb/hr	CO lb/hr	PM ₁₀ lb/hr	PM ₂₅ lb/hr	H ₂ S lb/hr
ENG-1	23	785	152.95	1.50	2.76	0.01	2.37	0.17	0.17	-
ENG-2	23	785	152.95	1.50	2.76	0.01	2.37	0.17	0.17	-
ENG-3	23	785	152.95	1.50	2.76	0.01	2.37	0.17	0.17	-
ENG-4	23	785	152.95	1.50	1.65	0.01	2.37	0.17	0.17	-
ENG-5	23	785	152.95	1.50	1.65	0.01	2.37	0.17	0.17	-
COMB-1	25	1400	1.00	4.00	0.01	0.004	0.03	0.001	0.001	-
VCU	40	1500	2.20	8.00	0.04	0.00	0.04	0.002	0.002	-
AMINE	10	Amb			-	-	-	-	-	0.09
DEHY	10	Amb			-	-	-	-	-	-
TANK-1	15	Amb			-	-	-	-	-	-
TANK-2	15	Amb			-	-	-	-	-	-
TANK-3	15	Amb			-	-	-	-	-	-
PWTK-1	15	Amb			-	-	-	-	-	-
GB-1	15	Amb			-	-	-	-	-	-
RB-GLY	20	500	42.82	0.5	0.12	0.01	0.1	0.01	0.01	-

RB-AM1	27	517	47.77	2	1.56	0.16	1.59	0.51	0.51	-
RB-AM2	27	517	47.77	2	1.56	0.16	1.59	0.51	0.51	-
LOAD-1	10	Amb			-	-	-	-	-	0.01
LOAD-2	10	Amb			-	-	-	-	-	0.05
FUG	10	Amb			-	-	-	-	-	-
HR	0	Amb			-	-	-	0.92	0.09	-
MSS	10	Amb			-	-	-	-	-	-

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.

4.1 Elevation Data

We will incorporate terrain into the modeling analysis. At least 1/3 arc-second resolution elevation data will be used. As the site is located in a rural area, rural dispersion coefficients will be implemented via the use of the RURAL keyword. A building 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 the engine structures, cooling fans, tanks and buildings.

4.2 Receptor Grid Description

For each pollutant, the radius of significant impact around the facility is established using a Cartesian grid. A 50-meter grid spacing is used for the facility boundary receptors. A 100-meter spacing is extended out to 1-km from the facility boundary in each direction for a very fine grid resolution. Receptors for a fine grid resolution are placed with 250-meter spacing to a distance of 2.5-km from the facility boundary. For intermediate and rough grid resolutions, 500-meter spacing and 1000-meter spacing are extended to 5-km and 10-km beyond the facility boundary, respectively. The elevations of facility sources, receptors and surrounding sources will be determined using the same method and most recent 7.5 minute DEM data currently available.

5.0 Meteorological Data

We will use the five-year Carlsbad, New Mexico (CARLSBAD) met data set, collected in 2020 to 2024 and available on the NMED website. We feel that met station is located in comparable terrain not far from the facility. Therefore, this data is representative of meteorological conditions at the facility.

6.0 Standards

Table 2 identifies the applicable significant impact levels (SIL) and NAAQS NMAAQs:

Table 2
SIL, NAAQS and NMAAQs

Pollutant	Averaging Period	SIL ($\mu\text{g}/\text{m}^3$)	NAAQS ($\mu\text{g}/\text{m}^3$)	PSD Increment ($\mu\text{g}/\text{m}^3$)	NMAAQs ($\mu\text{g}/\text{m}^3$)
NO ₂	1-Hour	7.52	188.03	--	--
NO ₂	24-Hour	5.0	--	--	188.03
NO ₂	Annual	1.0	99.66	25	94.02
CO	1-Hour	500	10,303.6	--	9,960.1
CO	8-Hour	2,000	40,069.6	--	14,997.5
H ₂ S	1/2-Hour	5	--	--	139.3
PM _{2.5}	24-Hour	1.2	35	9	--
PM _{2.5}	Annual	0.13	9.0	4	--
PM ₁₀	24-Hour	5.0	150	30	--
PM ₁₀	Annual	1.0	9.0	17	--
SO ₂	Annual	1.0		20	52.4
SO ₂	24-Hour	5.0		91	261.9
SO ₂	3-Hour	25.0	1309.3	512	--
SO ₂	1-Hour	7.8	196.4	--	--

1. The high-eighth-high daily maximum 1-hour NO₂ concentration will be used to evaluate compliance with the NAAQS.
2. PM₁₀ and PM_{2.5} list the Class II PSD Increment in lieu of the NMAAQs.

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

The maximum modeled ground-level concentrations (GLC_{Max}) 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/surround sources specified in the current version of the NMED Modeling Guidelines.

Table 3 below identifies the applicable background concentrations that will be used.

Table 3
Background Concentrations

Pollutant	Averaging Period	Background ($\mu\text{g}/\text{m}^3$)	Source ID
NO ₂	1-Hour	77.1	5ZR
NO ₂	Annual	9.7	5ZR
CO	1-Hour	1560	350010023
CO	8-Hour	1035	350010023
PM _{2.5}	24-Hour	16.7	5ZS
PM _{2.5}	Annual	6.6	5ZS
PM ₁₀	24-Hour	100.7	5ZS
PM ₁₀	Annual	37.3	5ZS

1. The NO₂ data is obtained from Table 31 of the NMAQB modeling guidelines and is the 1-hour background 98th percentile concentration. Since it is nearest the plant, NO₂ data is taken from the outside of Carlsbad monitoring station.
2. The PM_{2.5} data is obtained from Table 34 of the NMAQB modeling guidelines and is the 24-hour background 98th percentile concentration. Since it is nearest the plant, PM_{2.5} data is taken from the outside of Hobbs-Jefferson monitoring station.
3. The PM₁₀ data is obtained from Table 33 of the NMAQB modeling guidelines and is the 24-hour background 2nd High concentration. Since it is nearest the plant, PM₁₀ data is taken from the outside of Hobbs-Jefferson monitoring station.
4. Since there are no nearby monitors, neighboring sources will be utilized for SO₂ NAAQS and PSD increment modeling.

7.1 Radius of Impact (ROI) Analysis and Cumulative Impact Analysis (CIA)

We will conduct a significant impact analysis for each pollutant's emissions from the facility sources. If an air pollutant discharged by the facility results in an ambient impact greater than the significance levels mentioned in the NMED/AQB modeling guideline, the maximum extent of the significant impact area will be determined (as measured from the center of the facility to the furthest extent of the significant impact). The maximum extent will become a Radius of Impact (ROI). The area within the ROI then becomes the modeling domain for the CIA.

7.2 Neighboring Sources

Cumulative impacts to demonstrate compliance with the NO₂, CO, PM_{2.5}, PM₁₀, and SO₂, NAAQS may be calculated as facility impacts plus background concentrations or may be calculated as facility impacts plus neighboring source impacts. Therefore, neighboring sources may be used to evaluate compliance. For NAAQS SO₂ modeling, neighboring sources include all sources within 25 kilometers of the facility and all sources between 25 and 50 kilometers from the facility that are permitted to emit 1,000 pounds per hour or more were used, neighboring sources will be obtained from the NMAQB. Per NMED Guidance, we understand that we may exclude sources of SSM from the 1 hr SO₂ and H₂S modeling.

For PM_{2.5} and PM₁₀ modeling, we will include the Facility and nearby sources and adding secondary formation (if applicable) and a background concentration. Per NMED Modeling Guidelines, nearby sources includes all sources within 10 km of the Facility. An inventory of the surrounding sources will be obtained from the NMED. Based on EPA's Guidance for PM_{2.5} 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 SO₂ are considered to emit significant amounts of precursors. Sources with significant increases of PM_{2.5} precursors must qualitatively and/or quantitatively account for the secondary formation of PM_{2.5}. The secondary formation of PM_{2.5} will be calculated in this modeling following the NMED Modeling Guidelines.

7.3 PSD Increment Analysis

If the results of the ROI for any pollutants show an exceedance of the significance levels, PSD increment analysis will be conducted because the minor source baseline date has been established in the region. The PSD analysis will be conducted including all PSD increment consuming sources within the surrounding sources within 50 km plus the ROI or 65 km of the facility (whichever is greater). Unlike the CIA, a predicted maximum NO₂ concentration will be compared with the PSD standard. There is not a PSD Increment for the 1-hr SO₂ or 1-hr or 24-hr NO₂, therefore this analysis is not anticipated.

8.0 Class I Areas Analysis

Since the nearest Class I area is Carlsbad Caverns National Park at sixty-seven (67) km from the facility, the Class I Area analysis is not applicable.

If you have any questions, please contact me at 405-702-1618 or laura.worthen-lodes@altamira-us.com.

Sincerely,
Altamira-US, LLC

Laura Worthen Lodes, PE
Chief Engineering Officer

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:	Calvary Compressor Station
2	Name of company:	Kaiser-Francis Oil Company
3	Current Permit number:	9530M2
4	Name of applicant's modeler:	Laura Worthen-Lodes
5	Phone number of modeler:	laura.worthen-lodes@altamira-us.com
6	E-mail of modeler:	405-919-4129

16-B: Brief

1	Was a modeling protocol submitted and approved?	Yes ☐	No ☒
2	Why is the modeling being done?	Adding New Equipment	
3	Describe the permit changes relevant to the modeling.		
	Adding 2 combustors, removing one dehydration unit, removing one glycol reboiler, adding one glycol dehydration unit, adding one glycol reboiler, adding one amine unit, adding two amine reboilers and adding one vapor recovery unit.		
4	What geodetic datum was used in the modeling?	NAD83	
5	How long will the facility be at this location?	Indefinitely	
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).	
	NO2	March 16, 1988
	SO2	July 28, 1978
	PM10	February 20, 1979
	PM2.5	November 12, 2013
9	Provide the name and distance to Class I areas within 50 km of the facility (300 km for PSD permits).	
	None. Carlsbad Caverns National Park is 67 km distant.	
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.	
	None.	

16-C: Modeling History of Facility

1	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).			
	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 ₂ S	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

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

	NO ₂	☒	☒	☒	☐	☐
	SO ₂	☒	☐	☐	☐	☐
	H ₂ S	☐	☐	☐	☐	☒
	PM _{2.5}	☐	☒	☒	☐	☐
	PM ₁₀	☒	☐	☐	☐	☐
	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. None					
2	List any NMTAPs that are emitted but not modeled because stack height correction factor. Add additional rows to the table below, if required. None					
	Pollutant	Emission Rate (pounds/hour)	Emission Rate Screening Level (pounds/hour)	Stack Height (meters)	Correction Factor	Emission Rate/ Correction Factor

16-F: Modeling options

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

16-G: Surrounding source modeling

1	Date of surrounding source retrieval	6/22/2026
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
	40347EQPT3	facility source
	40347EQPT4	facility source
	40347EQPT5	facility source
	40347EQPT6	facility source
	40347EQPT7	facility source
	40347EQPT11	facility source
	40347RPNT3	facility source

16-H: Building and structure downwash

1	How many buildings are present at the facility?	10 downwash structures	
2	How many above ground storage tanks are present at the facility?	5	
3	Was building downwash modeled for all buildings and tanks? If not explain why below.	Yes ☒	No ☐
4	Building comments		

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 has a continuous fence as it's 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 restricted area or center of facility	End distance from restricted area or center of facility	Comments
		Discrete Cartesian	50m	Fenceline		
	Very Fine	Discrete Cartesian	100m	1000m		
	Very Fine	Discrete Cartesian	250m	2500m		
	Intermediate	Discrete Cartesian	500m	5000m		
	Rough	Discrete Cartesian	1000m	1000m		
5	Describe receptor spacing along the fence line.					
	50 m spacing					
	Describe the PSD Class I area receptors.					

6	N/A – no Class I areas within 50 km and not a PSD major project.
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16-J: 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).											
	Only one scenario was used.											
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.											
6	Were different emission rates used for short-term and annual modeling? If so describe below.										Yes ☒	No ☒
	The annual PM10 and PM2.5 modeling for the haul roads was based on the annual emissions rate due to the limited number of trucks annually. The 24 hr emission rate assumes 1 truck per day and the lb/hr emissions are prorated accordingly.											

16-K: NO₂ Modeling

1	Which types of NO ₂ modeling were used? The modeling assumed all NO _x was NO ₂ . Check all that apply.		
	☐	ARM2	
	☐	100% NO _x to NO ₂ conversion	
	☐	PVMRM	
	☐	OLM	
	☐	Other:	
2	Describe the NO ₂ modeling.		
	NO _x modeling followed the NMED modeling guidelines and assumed all NO _x was NO ₂ . For NAAQS and PSD Increment compliance the H1H for the 1-hr modeling and the 2023 annual value from the SIL modeling were added to the background concentration to demonstrate compliance. Only 2023 was modeled for the SIL analysis.		
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 ☐
	N/A		No ☐
4	Describe the design value used for each averaging period modeled.		
	1-hour: High first high Annual One Year Annual Average: per NMED guidance for Carlsbad met station 2023 was used		

16-L: Ozone Analysis

1	NMED has performed a generic analysis that demonstrates sources that are minor with respect to PSD do not cause or contribute to any violations of ozone NAAQS. The analysis follows.			
	The basis of the ozone SIL is documented in Guidance on Significant Impact Levels for Ozone and Fine Particles in the Prevention of Significant Deterioration Permitting Program , EPA, April 17, 2018 and associated documents. NMED accepts this SIL basis and incorporates it into this permit record by reference. Complete documentation of the ozone concentration analysis using MERPS is included in the New Mexico Air Quality Bureau Air Dispersion Modeling Guidelines.			
2	The MERP values presented in Table 10 and Table 11 of the NM AQB Modeling Guidelines that produce the highest concentrations indicate that facilities emitting no more than 250 tons/year of NO _x and no more than 250 tons/year of VOCs will cause less formation of O ₃ than the O ₃ significance level.			
	$[O_3]_{8-hour} = \left(\frac{250 \frac{ton}{yr}}{340_{MERP_{NOX}}} + \frac{250 \frac{ton}{yr}}{4679_{MERP_{VOC}}} \right) \times 1.96 \mu g/m^3$ =1.546 μg/m³, which is below the significance level of 1.96 μg/m³. Sources that produce ozone concentrations below the ozone SIL do not cause or contribute to air contaminant levels exceeding the ozone NAAQS.			
3	Does the facility emit at least 250 tons per year of NO _x or at least 250 tons per year of VOCs? Sources that emit at least 250 tons per year of NO _x or at least 250 tons per year of VOCs are covered by the analysis above and require an individual analysis.		Yes ☐	No ☐
5	For new PSD Major Sources or PSD major modifications, if MERPs were used to account for ozone fill out the information below. If another method was used describe below.			
	NO _x (ton/yr)	MERP _{NOX}	VOCs (ton/yr)	MERP _{VOC}
	N/A	N/A	N/A	N/A
				[O ₃] _{8-hour}
				N/A

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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.			
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.			
	Pollutant	NO _x	SO ₂	[PM2.5] _{24-hour}
	MERP _{annual}	26780	14978	0.001384 µg/m ³
	MERP _{24-hour}	7331	1981	[PM2.5] _{annual}
	Emission rate (ton/yr)	95.78	50.1	0.046026 µg/m ³

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		
	HAUL	HAUL1 through HAUL12		

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?					
	Unit ID	NO ₂	SO ₂	PM10	PM2.5	
	ENG1	X	X	X	X	
	ENG2	X	X	X	X	
	ENG3	X	X	X	X	
	ENG4	X	X	X	X	
	ENG5	X	X	X	X	
	RBGLY	X	X	X	X	
	RB_AM1	X	X	X	X	
	RB_AM2	X	X	X	X	
	VCU	X	X	X	X	
	COMB	X	X	X	X	
	HAUL1 to HAUL12			X	X	
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 ☐
	All currently constructed sources are included					

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)
	COMB1	39.39	23799.6	0.0189
	VCU	48	4078831.4	5.1378

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?			Yes ☐	No ☒
	If not please explain how increment consumption status is determined for the missing installation dates below.				
	N/A				
	Describe the determination of sigma-Y and sigma-Z for fugitive sources.				

2	HAUL is represented as a series of volume sources for the road. Large trucks were assumed and the dimensions in Section 5.3.3 of the modeling guidance was utilized.
3	Describe how the volume sources are related to unit numbers. Or say they are the same. HAUL is represented as a series of volume sources for the road. Large trucks were assumed and the dimensions in Section 5.3.3 of the modeling guidance was utilized.
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)			
	PM _{2.5} : Hobbs-Jefferson (350450019)			
	PM ₁₀ : N/A			
	SO ₂ : N/A			
	Other:			
	Comments:	NMED modeling guidance shows ID for Hobbs-Jefferson as 350250008		
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	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 ☐
	What was the source of the terrain data?		

2	USGS NED, 1/3 arc-second resolution elevation data retrieved on 6/15/26
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16-U: Modeling Files

1	Describe the modeling files:		
	File name (or folder and file name)	Pollutant(s)	Purpose (ROI/SIA, cumulative, culpability analysis, other)
	Calvary_SIL	CO: 1hr, 8hr	SIA
	Calvary_SIL	NO2: 1hr, period	SIA
	Calvary_SIL	PM10: 24hr, period	SIA
	Calvary_SIL	PM2.5: 24hr, period	SIA
	Calvary_SIL	SO2: 1hr,3hr,24-hr, period	SIA
	Calvary_SIL	H2S:1hr	SIA
	Calvary _NAAQS_PM25_24hr	PM2.5:24hr	Cumulative
	Calvary _NAAQS_PM25_Ann	PM2.5: period	Cumulative (used for both PSD Increment and NAAQS)
	Calvary _PSD_PM25_24hr	PM2.5: 24hr	Cumulative

16-V: PSD New or Major Modification Applications N/A

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 ☒
	Compliance demonstrated for all pollutants and averaging periods.		
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 (µg/m3)	Modeled Concentration with Surrounding Sources (µg/m3)	Secondary PM (µg/m3)	Background Concentration (µg/m3)	Cumulative Concentration (µg/m3)	Value of Standard (µg/m3)	Percent of Standard	Location		
								UTM E (m)	UTM N (m)	Elevation (ft)
SIL Analysis										
NOx – 1hr - Class II SIL	98.60	--	--	--	98.6	7.52	1311.18	640100	3577800	1064.13
NOx - annual-Class II SIL	4.15	--	--	--	4.1	1	414.70	640100	3577800	1064.13
CO-1 hr- SIL	805.35	--	--	--	805.3	2,000.00	40.27	640100	3577800	1064.13
CO-8 hr- SIL	497.91	--	--	--	497.9	500.00	99.58	640100	3577800	1064.13
PM10 – 24hr- Class II SIL	4.97	--	--	--	5.0	5	99.45	640060.27	3577805.82	1064.89
PM10 – Annual- Class II SIL	0.68	--	--	--	0.7	1	68.17	639868.57	3577779.54	1067.32
PM2.5 – 24hr- Class II SIL	4.97	--	0.0460	--	5.0	1.2	417.89	640060.27	3577805.82	1064.89
PM2.5 – Annual- Class II SIL	0.68	--	0.0014	--	0.7	0.13	521.27	639868.57	3577779.54	1067.32
SO2-1hr- Class II SIL	6.79	--	--	--	6.8	7.8	87.09	640200	3577900	1063.32

SO2-3hr- Class II SIL	5.88	--	--	--	5.9	25	23.54	640200	3577900	1063.32
SO2-24hr- Class II SIL	2.64	--	--	--	2.6	5	52.85	640200	3577900	1063.32
SO2-Annual- Class II SIL	0.308	--	--	--	0.3	1	30.81	639800	3577900	1064.15
H2S-1hr- SIL	0.095	--	--	--	0.1	1	9.45	640200	3577900	1063.32
H2S-1/2hr- SIL	0.095	--	--	--	0.1	5	1.89	640200	3577900	1063.32
NAAQS/NMAAQs Analysis										
NOx – 1hr- NMAAQs	98.60	--	--	58.6	157.2	188.03	83.60	640100	3577800	1064.13
NOx - annual- NMAAQs	4.15	--	--	9.7	13.8	94.02	14.73	640100	3577800	1064.13
PM2.5 – 24hr- NMAAQs	2.30	5.07	0.0460	16.7	21.8	35	62.32	640400	3578100	1061.08
PM2.5 – Annual- NMAAQs	0.68	2.19	0.0014	6.6	8.8	9	97.73	640400	3578100	1061.08
PSD Increment										
NOx - annual- Class II PSD	4.15			9.7	13.85	25	55.39	640100	3577800	1064.13
PM2.5 – 24hr- Class II PSD	3.13	6.02	0.0460		6.06	9	67.35	640100	3577800	1064.13
PM2.5 – Annual- Class II PSD	0.68	2.19	0.0014		2.20	4	54.90	640400	3578100	1061.08

16-X: Summary/conclusions

	A statement that modeling requirements have been satisfied and that the permit can be issued.
1	The SIL modeling was conducted using met year 2023 for all pollutants and averaging periods. NOx 1-h4 and annual and PM2.5 24-hr and annual exceeded the SILs. For the NAAQS and PSD increment analysis for NOx 1-hr and annual the highest concentration from the SIL was added to the background to demonstrate compliance. Further refined modeling was not needed. For PM2.5 24-hr for NAAQS modeling the H8H with background plus inventory sources was modeled for the 5 yr met data set. For PM2.5 annual modeling or NAAQS, 2023 was used as the met year with inventory sources and background. For PM2.5 annual increment modeling 2023 annual modeling with inventory sources was used. For PM2.5 24-hr PSD increment modeling the H2H for 2023 with inventory source was used. All modeling requirements pursuant to NMED Modeling Guidelines and 40 CFR Subpart 51, Appendix W have been satisfied; the permit may be issued.

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.

Compliance Test History Table

Unit No.	Test Description	Test Date
ENG 1-3	Tested for NO _x CO, and VOC in accordance with NSPS JJJJ.	6/10/2026

Section 20

Other Relevant Information

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

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

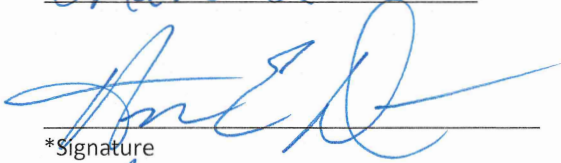
There is no other relevant information being provided with this application.

Section 22: Certification

Company Name: Kaiser-Francis Oil Company

I, Aaron Daniels, 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 27th day of July, 2026, upon my oath or affirmation, before a notary of the State of

Oklahoma

*Signature

Aaron Daniels

Printed Name

7/27/26

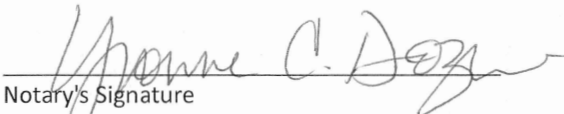
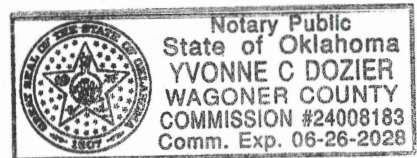
Date

ETHS Manager

Title

Scribed and sworn before me on this 27th day of July, 2026

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

26th day of June, 2028.

Notary's Signature

7/27/26

Date

Yvonne C. Dozier

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.