NSR PERMIT APPLICATION
COPPERHEAD GAS PLANT
LEA COUNTY, NM

July 2025

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

Prepared for:
Targa Midstream Services, LLC
Box 1909
Eunice, NM 88231
575-394-**2534**

Prepared by:
Altamira-US, LLC
525 Central Park Dr., Suite 500
Oklahoma City, Oklahoma 73105
405-842-1066

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**
Targa Midstream Services, LLC		10/31/2024
Permittee/Company Contact	**Phone**	**Email**
Robert Andries	713 584 1360	randries@targaresources.com

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

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

Universal Air Quality Permit Application

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

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

This application is submitted as (check all that apply): ☐ Request for a No Permit Required Determination (no fee)
☐ **Updating** an application currently under NMED review. Include this page and all pages that are being updated (no fee required).
Construction Status: ☐ Not Constructed ☒ Existing Permitted (or NOI) Facility ☐ Existing Non-permitted (or NOI) Facility
Minor Source: ☐ 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.: Invoice #: AQB 180396-AI38309 Confirmation #: 3128916276 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: **20.2.72.219.D.1a NMAC**
(e.g. application for a new minor source would be 20.2.72.200.A NMAC, one example for a Technical Permit Revision is 20.2.72.219.B.1.b NMAC, a Title V acid rain application would be: 20.2.70.200.C NMAC)

Section 1 – Facility Information

Section 1-A: Company Information

		AI # if known: 38309	Updating Permit/NOI #: **7712**
1	Facility Name: Copperhead Gas Plant	Plant primary SIC Code (4 digits): 1321	
		Plant NAIC code (6 digits): 211112	
a	Facility Street Address (If no facility street address, provide directions from a prominent landmark): The subject facility is located approximately 25.9 miles east of Malaga in Lea County, NM. 32.212128, -103.624164		
2	Plant Operator Company Name: Targa Midstream Services LLC	Phone/Fax: 575-631-7093	
a	Plant Operator Address: PO Box 1909 Eunice, NM 88231		

b	Plant Operator's New Mexico Corporate ID or Tax ID: 1948249	
3	Plant Owner(s) name(s): Targa Midstream Services LLC	Phone/Fax: 575-631-7093
a	Plant Owner(s) Mailing Address(s): PO Box 1909 Eunice, NM 88231	
4	Bill To (Company): Targa Midstream Services LLC	Phone/Fax: 575-631-7093
a	Mailing Address: PO Box 1909 Eunice, NM 88231	E-mail: cschroder@targaresources.com
5	☒ Preparer: Laura Worthen Lodes, PE ☒ Consultant: Altamira-US LLC	Phone/Fax: 405-919-4129
a	Mailing Address:525 Central Park Dr, Suite 500	E-mail: laura.worthen-lodes@altamira-us.com
6	Plant Operator Contact: Jimmy Oxford	Phone/Fax: (940) 220-2493
a	Address: 4401 N I-35, Suite 303, Denton, TX 76207	E-mail: joxford@targaresources.com
7	Air Permit Contact: Catherine Schroder	Title: Manger ES&H – Air Quality Permitting – G&P
a	E-mail: cschroder@targaresources.com	Phone/Fax: (405) 749-5614
b	Mailing Address: 14000 Quail Springs Pkwy Ste 215, Oklahoma City, OK 73134	
c	The designated Air permit Contact will receive all official correspondence (i.e. letters, permits) from the Air Quality Bureau.	

Section 1-B: Current Facility Status

1.a	Has this facility already been constructed? ☒ Yes ☐ No	1.b If yes to question 1.a, is it currently operating in New Mexico? ☒ Yes ☐ No
2	If yes to question 1.a, was the existing facility subject to a Notice of Intent (NOI) (20.2.73 NMAC) before submittal of this application? ☐ Yes ☒ No	If yes to question 1.a, was the existing facility subject to a construction permit (20.2.72 NMAC) before submittal of this application? ☒ Yes ☐ No
3	Is the facility currently shut down? ☐ Yes ☒ No	If yes, give month and year of shut down (MM/YY):
4	Was this facility constructed before 8/31/1972 and continuously operated since 1972? ☐ Yes ☒ No	
5	If Yes to question 3, has this facility been modified (see 20.2.72.7.P NMAC) or the capacity increased since 8/31/1972? ☐ Yes ☐ No ☐ N/A	
6	Does this facility have a Title V operating permit (20.2.70 NMAC)? ☐ Yes ☒ No	If yes, the permit No. is: P-
7	Has this facility been issued a No Permit Required (NPR)? ☐ Yes ☒ No	If yes, the NPR No. is:
8	Has this facility been issued a Notice of Intent (NOI)? ☐ Yes ☒ No	If yes, the NOI No. is:
9	Does this facility have a construction permit (20.2.72/20.2.74 NMAC)? ☐ Yes ☒ No	If yes, the permit No. is:
10	Is this facility registered under a General permit (GCP-1, GCP-2, etc.)? ☒ Yes ☐ No	If yes, the register No. is: 7712

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) Natural Gas			
a	Current	Hourly: 6250 MSCF/Hr	Daily: 150 MMSCF/d	Annually: 54750 MMSCF/yr
b	Proposed	Hourly: 35.42 MMSCF/hr	Daily: 850 MMSCF/D	Annually: 310,250 MMSCF/yr
2	What is the facility's maximum production rate, specify units (reference here and list capacities in Section 20, if more room is required)			
a	Current	Hourly:	Daily:	Annually:
b	Proposed	Hourly:	Daily:	Annually:

Section 1-D: Facility Location Information

1	Latitude (decimal degrees): 32.212128	Longitude (decimal degrees): -103.624164	County: Lea	Elevation (ft): 3594
2	UTM Zone: ☐ 12 or ☒ 13	Datum: ☒ NAD 83 ☐ WGS 84		
a	UTM E (in meters, to nearest 10 meters): 629663.29	UTM N (in meters, to nearest 10 meters): 3564780		
3	Name and zip code of nearest New Mexico town: Malaga			
4	Detailed Driving Instructions from nearest NM town (attach a road map if necessary): The subject facility is located approximately 25.9 miles east of Malaga in Lea County, NM. 32.212128, -103.624164			
5	The facility is 25.9 (distance) miles East (direction) of Malaga (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: N/A			
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:			
9	Name nearest Class I area: Carlsbad Caverns			
10	Shortest distance (in km) from facility boundary to the boundary of the nearest Class I area (to the nearest 10 meters): 53 miles			
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: 5.87 miles			
12	Method(s) used to delineate the Restricted Area: continuous fencing "**Restricted Area**" is an area to which public entry is effectively precluded. Effective barriers include continuous fencing, continuous walls, or other continuous barriers approved by the Department, such as rugged physical terrain with steep grade that would require special equipment to traverse. If a large property is completely enclosed by fencing, a restricted area within the property may be identified with signage only. Public roads cannot be part of a Restricted Area.			
13	Does the owner/operator intend to operate this source as a portable stationary source as defined in 20.2.72.7.X NMAC? ☐ Yes ☒ No A portable stationary source is not a mobile source, such as an automobile, but a source that can be installed permanently at one location or that can be re-installed at various locations, such as a hot mix asphalt plant that is moved to different job sites.			
14	Will this facility operate in conjunction with other air regulated parties on the same property? ☒ No ☐ Yes If yes, what is the name and permit number (if known) of the other facility?			

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 ($\frac{hours}{day}$): 24	($\frac{days}{week}$): 7	($\frac{weeks}{year}$): 52	($\frac{hours}{year}$): 8760		
2	Facility's maximum daily operating schedule (if less than 24 $\frac{hours}{day}$)? Start:		☐AM ☐PM	End:	☐AM ☐PM	
3	Month and year of anticipated start of construction: December 2024					
4	Month and year of anticipated construction completion: January 2025					
5	Month and year of anticipated startup of new or modified facility: January 2025					
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: Xcel Commercial power is purchased from a commercial utility company, which specifically does not include power generated on site for the sole purpose of the user.		

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

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

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

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

1	Responsible Official (R.O.) Jimmy Oxford (20.2.70.300.D.2 NMAC):		Phone: (940) 220-2493
a	R.O. Title: Senior Vice President Operations	R.O. e-mail: joxford@targaresources.com	
b	R. O. Address: 4401 North I-35, Suite 303		
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.): Targa Resources, Inc.		
a	Address of Parent Company: 811 Louisiana Street, Suite 2100, Houston, TX 77002		
5	Names of Subsidiary Companies ("Subsidiary Companies" means organizations, branches, divisions or subsidiaries, which are owned, wholly or in part, by the company to be permitted.): None		
6	Telephone numbers & names of the owners' agents and site contacts familiar with plant operations: Catherine Schroder, cschroder@targaresources.com		
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: 25.72 km from Texas; No Tribes or pueblos or local pollution control programs within 80 km.		

Section 1-I – Submittal Requirements

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

Hard Copy Submittal Requirements:

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

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

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

Electronic files sent by (check one):

☐ CD/DVD attached to paper application

☒ Secure electronic transfer. Air Permit Contact Name Laura Worthen Lodes,

Email Laura.Worthen-Lodes@altamira-us.com Phone number 405-919-4129.

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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Payment Terms & Conditions

These Payment Terms and Conditions ("Terms") govern your use of the Internet Bill Presentment and Payment Service (the "Service"). As used in these Terms, the words "we," "us," and "our" refer to the Biller you are paying. The words "you" and "your" refer to you as the business or consumer using the Service and accepting these Terms. The words "you" and "your" also include any user you authorize to use the Service on your behalf.

1. Erroneous Instructions. If we receive a payment instruction authorized by you and the instruction is erroneous in any way, we shall have no obligation or liability for the error.

2. Transaction Limitations. Please be aware that certain types of bank accounts have limits on the numbers of transfers or withdrawals that may be made per month. Your bank may refuse transfers which would exceed such limits, so we recommend you check with your bank to determine what limitations are imposed on withdrawals from any account. If we are not able to debit the amount required to cover an authorized payment and any fees from your bank account, the payment you have authorized may not be made, and we will not be held liable if the payment is not made. We have no obligation to try to debit an account for a specific payment more than once.

3. Authorized Users. If you allow other users to access this Service, you are authorizing payments they initiate through the Service. Any signer on your bank accounts is authorized to make payments, even if your account otherwise requires two or more signatures for withdrawals. You agree that you are an authorized signer or owner of any account you instruct us to debit or charge.

4. ACH Authorization. When you initiate a payment through the Service, you authorize the Biller to (a) debit the bank account you designate through the Automated Clearing House or (b) charge the credit card account you designate. If your payment is made by debit to a bank account, you agree that you and your payment will be subject to the rules of the National Automated Clearing House Association

5. You agree to regularly and promptly review and verify all transactions either through this Service or through the monthly statements received from your bank or credit card issuer holding your account(s). Also, if your bank or credit card statement shows transactions by us that you did not authorize, contact your bank or card issuer promptly.

6. Our Liability. If we do not complete a payment which you have authorized in a timely manner, in accordance with these Terms, we will be liable only for your direct losses or damages. However, there are some exceptions. We will NOT be liable, for example, when:

a. Through no fault of ours, your account does not contain sufficient available funds for us to debit the account in the amount of the payment due, or your account does not have sufficient available credit for us to charge the amount of the payment due:

b. Circumstances beyond our control (such as fire, flood, or interruption of Internet access) prevent or impede the transaction, despite reasonable precautions we have taken.

c. The funds in your account are subject to an uncollected funds hold, legal process or any other encumbrance or claim restricting transfers at the time we attempt to debit your account for an authorized payment(s).

d. The information you have supplied to us is incorrect, incomplete or not timely

7. Disclaimer. We do not warrant that the Service will be uninterrupted or error free. There are times that the Service may be unavailable due to scheduled or unscheduled maintenance. We will have no liability for (i) any failure or malfunction of the equipment or software you use to access the Service, or (ii) any actions or omissions of any person or entity providing you with an Internet browser or Internet access.

Table 2-A: Regulated Emission Sources

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

Unit Number[1]	Source Description	Make	Model #	Serial #	Manufacturer's Rated Capacity[3] (Specify Units)	Requested Permitted Capacity[3] (Specify Units)	Date of Manufacture[2] / Date of Construction/ Reconstruction[2]	Controlled by Unit # / Emissions vented to Stack #	Source Classification Code (SCC)	For Each Piece of Equipment, Check One	RICE Ignition Type (CI, SI, 4SLB, 4SRB, 2SLB)[4]	Replacing Unit No.
FUG	Facility Fugitives	N/A	N/A	N/A	N/A	N/A	4/5/2018	FUG / FUG	31088811	x Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
DEHY-1	Glycol Dehydrator	N/A	N/A	N/A	175 MMSCFD	175 MMSCFD	4/5/2018	FLARE / FLARE	31000305	x Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
H-1	Dehydrator Boiler	Exterran	Custom	488702002	3 MMBTUH	3 MMBTUH	2/1/2024	H-1 / H-1	31000404	x Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
FLARE	Flare-Dehydrator/Tank control	Hero	N/A	F2OU126	150 MMSCFD	150 MMSCFD	4/5/2018	FLARE / FLARE	32000205	x Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
FLARE	Flare-SSM/M-CS	N/A	N/A	N/A	150 MMSCFD	150 MMSCFD	4/5/2018	FLARE / FLARE	32000205	x Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
Tank-1	Condensate Tank	TBD	TBD	TBD	400 bbl	400 bbl	TBD	Tank-1 / FLARE	40400315	x Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
Tank-2	Condensate Tank	TBD	TBD	TBD	400 bbl	400 bbl	TBD	Tank-2 / FLARE	40400315	x Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
Tank-3	Produced Water Tank	McMillan	N/A	A14090	400 bbl	400 bbl	4/5/2018	Tank-3 /	40400311	x Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
Tank-4	Produced Water Tank	McMillan	N/A	A14032	400 bbl	400 bbl	4/5/2018	Tank-4 /	40400311	x Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
Load-1	Load-out of Produced Water	N/A	N/A	N/A	33791.70 bbl/y	33791.70 bbl/y	4/5/2018	Load-1 / Load-1	40400250	x Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
Load-2	Load-out of Slop Tnk	N/A	N/A	N/A	824,564 bbl/y	824,564 bbl/y	4/5/2018	Load-2 / Load-2	40400250	x Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
SSM-CS	Pigging and purging pipeline Flare - SSM- CS	N/A	N/A	N/A	150 MMSCFD	150 MMSCFD	4/5/2018	SSM-CS / SSM-CS	31000299	x Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
H-2	Dehydrator Boiler	TBD	TBD	TBD	3 MMBTUH	3 MMBTUH	TBD	H-2 / H-2	31000404	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
DEHY-2	Glycol Dehydrator	TBD	TBD	TBD	175 MMSCFD	175 MMSCFD	TBD	FLARE / FLARE	31000305	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
HAUL	Haul Roads	N/A	N/A	N/A	N/A	N/A	4/5/2018	HAUL / HAUL		x Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		

Unit Number[1]	Source Description	Make	Model #	Serial #	Manufacturer's Rated Capacity[3] (Specify Units)	Requested Permitted Capacity[3] (Specify Units)	Date of Manufacture[2] / Date of Construction/ Reconstruction[2]	Controlled by Unit # / Emissions vented to Stack #	Source Classification Code (SCC)	For Each Piece of Equipment, Check One	RICE Ignition Type (CI, SI, 4SLB, 4SRB, 2SLB)[4]	Replacing Unit No.
A-CHP	Amine Unit - Plant 1	TBD	TBD	TBD	350 MMSCFD	350 MMSCFD	TBD	AGI	31000305	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
A-CH2	Amine Unit - Plant 2	TBD	TBD	TBD	350 MMSCFD	350 MMSCFD	TBD	AGI	31000305	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
DEHY-CHP	Plant 1 - DEHY	TBD	TBD	TBD	350 MMSCFD	350 MMSCFD	TBD		31000305	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
DEHY-CH2	Plant 2- DEHY	TBD	TBD	TBD	350 MMSCFD	350 MMSCFD	TBD		31000305	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
H-1701-CHP	HMO Heater 1701	TBD	TBD	TBD	73.04 MMBtu/hr	73.04 MMBtu/hr	TBD	H-1701-CHP	31000405	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
H-1702-CHP	HMO Heater 1702	TBD	TBD	TBD	73.04 MMBtu/hr	73.04 MMBtu/hr	TBD	H-1702-CHP	31000405	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
H-1703-CHP	HMO Heater 1703	TBD	TBD	TBD	73.04 MMBtu/hr	73.04 MMBtu/hr	TBD	H-1703-CHP	31000405	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
H-1704-CHP	HMO Heater 1704	TBD	TBD	TBD	35.5 MMBtu/hr	35.5 MMBtu/hr	TBD	H-1704-CHP	31000405	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
H-4701-CHP	Regen Gas Heater 4701	TBD	TBD	TBD	13.017 MMBtu/hr	13.017 MMBtu/hr	TBD	H-4701-CHP	31000405	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
H-1701-CH2	HMO Heater 1701	TBD	TBD	TBD	73.04 MMBtu/hr	73.04 MMBtu/hr	TBD	H-1701-CH2	31000405	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
H-1702-CH2	HMO Heater 1202	TBD	TBD	TBD	73.04 MMBtu/hr	73.04 MMBtu/hr	TBD	H-1702-CH2	31000405	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
H-1703-CH2	HMO Heater 1703	TBD	TBD	TBD	73.04 MMBtu/hr	73.04 MMBtu/hr	TBD	H-1703-CH2	31000405	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
H-1704-CH2	HMO Heater 1704	TBD	TBD	TBD	35.5 MMBtu/hr	35.5 MMBtu/hr	TBD	H-1704-CH2	31000405	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
H-4701-CH2	Regen Gas Heater 4701	TBD	TBD	TBD	13.017 MMBtu/hr	13.017 MMBtu/hr	TBD	H-4701-CH2	31000405	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
FL-1800-CHP	Flare 1: Steady State	N/A	N/A	N/A	0.0255 MMSCFD	0.0255 MMSCFD	TBD	FL-1800-CHP	31000215	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
FL-1800-CH2	Flare 2: Steady State	N/A	N/A	N/A	0.0255 MMSCFD	0.0255 MMSCFD	TBD	FL-1800-CH2	31000215	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
FL-1800-CHP	Flare: Startup, Shutdown, Maintenance, Malfunction	N/A	N/A	N/A	N/A	N/A	TBD	FL-1800-CHP	31000215	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		

Unit Number[1]	Source Description	Make	Model #	Serial #	Manufacturer's Rated Capacity[3] (Specify Units)	Requested Permitted Capacity[3] (Specify Units)	Date of Manufacture[2] / Date of Construction/ Reconstruction[2]	Controlled by Unit # / Emissions vented to Stack #	Source Classification Code (SCC)	For Each Piece of Equipment, Check One	RICE Ignition Type (CI, SI, 4SLB, 4SRB, 2SLB)[4]	Replacing Unit No.
FL-1800-CH2	Flare: Startup, Shutdown, Maintenance, Malfunction	N/A	N/A	N/A	N/A	N/A	TBD	FL-1800-CH2	31000215	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
FUG-CHP	Plant 1 Fugitives	N/A	N/A	N/A	N/A	N/A	TBD	FUG-CHP	31088811	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
FUG-CH2	Plant 2 Fugitives	N/A	N/A	N/A	N/A	N/A	TBD	FUG-CH2	31088811	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
TK-1907-CHP	Produced Water Tank	TBD	TBD	TBD	500 bbl	500 bbl	TBD	VCU/TK-1907-CHP	40400315	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
TK-1908-CHP	Produced Water Tank	TBD	TBD	TBD	500 bbl	500 bbl	TBD	VCU/TK-1908-CHP	40400315	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
TK-1907-CH2	Produced Water Tank	TBD	TBD	TBD	500 bbl	500 bbl	TBD	VCU/TK-1907-CH2	40400315	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
TK-1908-CH2	Produced Water Tank	TBD	TBD	TBD	500 bbl	500 bbl	TBD	VCU/TK-1907-CH2	40400315	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
L-P	Pressurized Loading	N/A	N/A	N/A	200 Loads/yr	200 Loads/yr	TBD	L-P	40400250	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
VCU	Vapor Combustion Unit	TBD	TBD	TBD	0.45 MMBtu/hr	0.45 MMBtu/hr	TBD	VCU	31000205	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
SSM-Plant	Startup, Shutdown, Maintenance	N/A	N/A	N/A	N/A	N/A	TBD	SSM-PLANT	31088811	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
PIG-1	Pigging	N/A	N/A	N/A	N/A	N/A	TBD	FL-1800-CHP	31000211	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
PIG-2	Pigging	N/A	N/A	N/A	N/A	N/A	TBD	FL-1800-CHP	31000211	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
PIG-3	Pigging	N/A	N/A	N/A	N/A	N/A	TBD	FL-1800-CHP	31000211	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
PIG-4	Pigging	N/A	N/A	N/A	N/A	N/A	TBD	FL-1800-CHP	31000211	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
PIG-5	Pigging	N/A	N/A	N/A	N/A	N/A	TBD	FL-1800-CHP	31000211	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		

Unit Number[1]	Source Description	Make	Model #	Serial #	Manufacturer's Rated Capacity[3] (Specify Units)	Requested Permitted Capacity[3] (Specify Units)	Date of Manufacture[2] / Date of Construction/ Reconstruction[2]	Controlled by Unit # / Emissions vented to Stack #	Source Classification Code (SCC)	For Each Piece of Equipment, Check One	RICE Ignition Type (CI, SI, 4SLB, 4SRB, 2SLB)[4]	Replacing Unit No.
PIG-6	Pigging	N/A	N/A	N/A	N/A	N/A	TBD	FL-1800-CHP / FL-1800-CHP	31000211	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
CHP-C-5100	RESIDUE GAS COMPRESSOR #1	TBD	TBD	TBD	N/A	N/A	TBD		31000313	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
CHP-C-5110	RESIDUE GAS COMPRESSOR #2	TBD	TBD	TBD	N/A	N/A	TBD		31000313	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
CHP-C-5120	RESIDUE GAS COMPRESSOR #3	TBD	TBD	TBD	N/A	N/A	TBD		31000313	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
CHP-C-5130	RESIDUE GAS COMPRESSOR #4	TBD	TBD	TBD	N/A	N/A	TBD		31000313	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
CHP-C-5140	RESIDUE GAS COMPRESSOR #5	TBD	TBD	TBD	N/A	N/A	TBD		31000313	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
CHP-C-1160	MP FLASH COMPRESSOR #1	TBD	TBD	TBD	N/A	N/A	TBD		31000313	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
CHP-C-1170	MP FLASH COMPRESSOR #2	TBD	TBD	TBD	N/A	N/A	TBD		31000313	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
CHP-C-1180	MP FLASH COMPRESSOR #3	TBD	TBD	TBD	N/A	N/A	TBD		31000313	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
CHP-C-1120	LP FLASH COMPRESSOR #1	TBD	TBD	TBD	N/A	N/A	TBD		31000313	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
CHP-C-1130	LP FLASH COMPRESSOR #2	TBD	TBD	TBD	N/A	N/A	TBD		31000313	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
CHP-C-6100	ACID GAS COMPRESSOR #1	TBD	TBD	TBD	N/A	N/A	TBD		31000313	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
CHP-C-6110	ACID GAS COMPRESSOR #2	TBD	TBD	TBD	N/A	N/A	TBD		31000313	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
CHP-C-6120	ACID GAS COMPRESSOR #3	TBD	TBD	TBD	N/A	N/A	TBD		31000313	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
CH2-C-5100	RESIDUE GAS COMPRESSOR #1	TBD	TBD	TBD	N/A	N/A	TBD		31000313	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
CH2-C-5110	RESIDUE GAS COMPRESSOR #2	TBD	TBD	TBD	N/A	N/A	TBD		31000313	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
CH2-C-5120	RESIDUE GAS COMPRESSOR #3	TBD	TBD	TBD	N/A	N/A	TBD		31000313	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
CH2-C-5130	RESIDUE GAS COMPRESSOR #4	TBD	TBD	TBD	N/A	N/A	TBD		31000313	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		

Unit Number[1]	Source Description	Make	Model #	Serial #	Manufacturer's Rated Capacity[3] (Specify Units)	Requested Permitted Capacity[3] (Specify Units)	Date of Manufacture[2] / Date of Construction/ Reconstruction[2]	Controlled by Unit # / Emissions vented to Stack #	Source Classification Code (SCC)	For Each Piece of Equipment, Check One	RICE Ignition Type (CI, SI, 4SLB, 4SRB, 2SLB)[4]	Replacing Unit No.
CH2-C-5140	RESIDUE GAS COMPRESSOR #5	TBD	TBD	TBD	N/A	N/A	TBD		31000313	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
CH2-C-6100	ACID GAS COMPRESSOR #1	TBD	TBD	TBD	N/A	N/A	TBD		31000313	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
CH2-C-6110	ACID GAS COMPRESSOR #2	TBD	TBD	TBD	N/A	N/A	TBD		31000313	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
CH2-C-6120	ACID GAS COMPRESSOR #3	TBD	TBD	TBD	N/A	N/A	TBD		31000313	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
CS-C-1	CS Compressor #1	Ariel	JGC/6	F56366	N/A	N/A	9/18/2018		31000313	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
CS-C-104	CS Compressor #4	Ariel	JGC/6	F37977	N/A	N/A	11/25/2024		31000313	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
CS-C-2	CS Compressor #2	Ariel	JGC/6	F56562	N/A	N/A	1/18/2019		31000313	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
CS-C-3	CS Compressor #3	Ariel	JGC/6	F58834	N/A	N/A	9/6/2019		31000313	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
CS-C-5	CS Compressor #5	TBD	TBD	TBD	N/A	N/A	TBD		31000313	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
CS-C-6	CS Compressor #6	TBD	TBD	TBD	N/A	N/A	TBD		31000313	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
CS-C-7	CS Compressor #7	TBD	TBD	TBD	N/A	N/A	TBD		31000313	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		
CS-C-8	CS Compressor #8	TBD	TBD	TBD	N/A	N/A	TBD		31000313	☐ Existing (unchanged) ☐ To be Removed x New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced		

[1] Unit numbers must correspond to unit numbers in the previous permit unless a complete cross reference table of all units in both permits is provided.
[2] Specify dates required to determine regulatory applicability.
[3] To properly account for power conversion efficiencies, generator set rated capacity shall be reported as the rated capacity of the engine in horsepower, not the kilowatt capacity of the generator set.
[4] "4SLB" means four stroke lean burn engine, "4SRB" means four stroke rich burn engine, "2SLB" means two stroke lean burn engine, "CI" means compression ignition, and "SI" means spark ignition

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

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

Unit Number	Source Description	Manufacturer	Model No. / Serial No.	Max Capacity / Capacity Units	List Specific 20.2.72.202 NMAC Exemption (e.g. 20.2.72.202.B.5) / Insignificant Activity citation (e.g. IA List Item #1.a)	Date of Manufacture /Reconstruction[2] / Date of Installation /Construction[2]	For Each Piece of Equipment, Check Onc
TANK-7	Lube Oil			500 GAL	exempt per 20.2.72.202.B(2)	TBD	☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TANK-8	Lube Oil			500 GAL	exempt per 20.2.72.202.B(2)	TBD	☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TANK-9	TEG Tank			500 GAL	exempt per 20.2.72.202.B(2)	TBD	☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TANK-10	Methanol Tote			500 GAL	exempt per 20.2.72.202.B(5	4/5/2018	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-1901-CHP	LUBE OIL DRAIN SUMP			1000 GAL	exempt per 20.2.72.202.B(2)	TBD	☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-1902-CHP	OPEN DRAIN SUMP			1000 GAL	exempt per 20.2.72.202.B(2)	TBD	☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-1903-CHP	USED LUBE OIL TANK			210 BBL	exempt per 20.2.72.202.B(2)	TBD	☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-1904-CHP	USED LUBE OIL TANK			210 BBL	exempt per 20.2.72.202.B(2)	TBD	☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-1905-CHP	OPEN DRAIN STORAGE TANK			400 BBL	exempt per 20.2.72.202.B(2)	TBD	☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-1906-CHP	REFRIGERATION LUBE OIL TANK			1000 GAL	exempt per 20.2.72.202.B(2)	TBD	☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced

Unit Number	Source Description	Manufacturer	Model No. / Serial No.	Max Capacity / Capacity Units	List Specific 20.2.72.202 NMAC Exemption (e.g. 20.2.72.202.B.5) / Insignificant Activity citation (e.g. IA List Item #1.a)	Date of Manufacture /Reconstruction[2] / Date of Installation /Construction[2]	For Each Piece of Equipment, Check Onc
TK-1909-CHP	LEAN AMINE TANK			400 BBL	exempt per 20.2.72.202.B(2)	TBD	☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-1910-CHP	WATER MAKEUP TANK			1000 BBl	exempt per 20.2.72.202.B(2)	TBD	☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-1911-CHP	TEG TANK			210 BBL	exempt per 20.2.72.202.B(2)	TBD	☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-1917-CHP	NEW LUBE OIL TANK (ACID GAS)			210 BBL	exempt per 20.2.72.202.B(2)	TBD	☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-1960-CHP	LUBE OIL MAKEUP TANK			500 GAL	exempt per 20.2.72.202.B(2)	TBD	☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-1970-CHP	CYLINDER OIL TANK			500 GAL	exempt per 20.2.72.202.B(2)	TBD	☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-1980-CHP	CYLINDER OIL TANK			500 GAL	exempt per 20.2.72.202.B(2)	TBD	☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-2901-CHP	AMINE SUMP			1000 GAL	exempt per 20.2.72.202.B(2)	TBD	☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-3901-CHP	GLYCOL SUMP			1000 GAL	exempt per 20.2.72.202.B(2)	TBD	☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-3920-CHP	JW SURGE TANK			1000 GAL	exempt per 20.2.72.202.B(2)	TBD	☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-3921-CHP	LUBE OIL MAKEUP TANK			300 GAL	exempt per 20.2.72.202.B(2)	TBD	☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-3930-CHP	JW SURGE TANK			1000 GAL	exempt per 20.2.72.202.B(2)	TBD	☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-6900-CHP	ACID GAS CYLINDER LUBE OIL TANK			1000 GAL	exempt per 20.2.72.202.B(2)	TBD	☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-1901-CH2	LUBE OIL DRAIN SUMP			1000 GAL	exempt per 20.2.72.202.B(2)	TBD	☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-1902-CH2	OPEN DRAIN SUMP			1000 GAL	exempt per 20.2.72.202.B(2)	TBD	☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced

Unit Number	Source Description	Manufacturer	Model No. / Serial No.	Max Capacity / Capacity Units	List Specific 20.2.72.202 NMAC Exemption (e.g. 20.2.72.202.B.5) / Insignificant Activity citation (e.g. IA List Item #1.a)	Date of Manufacture /Reconstruction[2] / Date of Installation /Construction[2]	For Each Piece of Equipment, Check Onc
TK-1903-CH2	USED LUBE OIL TANK			210 BBL	exempt per 20.2.72.202.B(2)	TBD	☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-1904-CH2	NEW LUBE OIL TANK			210 BBL	exempt per 20.2.72.202.B(2)	TBD	☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-1905-CH2	OPEN DRAIN STORAGE TANK			400 BBL	exempt per 20.2.72.202.B(2)	TBD	☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-1906-CH2	REFRIGERATION LUBE OIL TANK			1000 GAL	exempt per 20.2.72.202.B(2)	TBD	☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-1909-CH2	LEAN AMINE TANK			400 BBL	exempt per 20.2.72.202.B(2)	TBD	☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-1910-CH2	WATER MAKEUP TANK			1000 BBL	exempt per 20.2.72.202.B(2)	TBD	☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-1911-CH1	TEG TANK			210 BBL	exempt per 20.2.72.202.B(2)	TBD	☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-1917-CH2	NEW LUBE OIL TANK (ACID GAS)			210 BBL	exempt per 20.2.72.202.B(2)	TBD	☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-1960-CH2	LUBE OIL MAKEUP TANK			500 GAL	exempt per 20.2.72.202.B(2)	TBD	☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-1970-CH2	CYLINDER OIL TANK			500 GAL	exempt per 20.2.72.202.B(2)	TBD	☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-1980-CH2	CYLINDER OIL TANK			500 GAL	exempt per 20.2.72.202.B(2)	TBD	☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-2901-CH2	AMINE SUMP			1000 GAL	exempt per 20.2.72.202.B(2)	TBD	☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-3901-CH2	GLYCOL SUMP			1000 GAL	exempt per 20.2.72.202.B(2)	TBD	☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-3920-CH2	JW SURGE TANK			1000 GAL	exempt per 20.2.72.202.B(2)	TBD	☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-3921-CH2	LUBE OIL MAKEUP TANK			300 GAL	exempt per 20.2.72.202.B(2)	TBD	☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-3930-CH2	JW SURGE TANK			1000 GAL	exempt per 20.2.72.202.B(2)	TBD	☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced

Unit Number	Source Description	Manufacturer	Model No. / Serial No.	Max Capacity / Capacity Units	List Specific 20.2.72.202 NMAC Exemption (e.g. 20.2.72.202.B.5) / Insignificant Activity citation (e.g. IA List Item #1.a)	Date of Manufacture /Reconstruction[2] / Date of Installation /Construction[2]	For Each Piece of Equipment, Check Onc
TK-6900-CH2	ACID GAS CYLINDER LUBE OIL TANK			1000 GAL	exempt per 20.2.72.202.B(2)	TBD	☐ Existing (unchanged) ☐ To be Removed ☒ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
E-1	NATURAL GAS-FIRED MICROTURBINE			87.17 HP	NMAC 20.72.202.B(5)	4/5/2018	☒ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced

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

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

Table 2-C: Emissions Control Equipment

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

Control Equipment Unit No.	Control Equipment Description	Date Installed	Controlled Pollutant(s)	Controlling Emissions for Unit Number(s)[1]	Efficiency (% Control by Weight)	Method used to Estimate Efficiency
BTEX	BTEX Condenser	4/5/2018	Total HAP	DEHY-1	52	Process simulator
FLARE	Flare	4/5/2018	Total HAP	DEHY-1	98	Design Calculation
BTEX	BTEX Condenser	4/5/2018	Volatile Organic Compounds (VOC)	DEHY-1	52	Process simulator
FLARE	Flare	4/5/2018	Volatile Organic Compounds (VOC)	DEHY-1	98	Design Calculation
BTEX	BTEX Condenser	4/5/2018	Total HAP	DEHY2	52	Process simulator
FLARE	Flare	4/5/2018	Total HAP	DEHY2	98	Design Calculation
BTEX	BTEX Condenser	4/5/2018	Volatile Organic Compounds (VOC)	DEHY2	52	Process simulator
FLARE	Flare	4/5/2018	Volatile Organic Compounds (VOC)	DEHY2	98	Design Calculation
FLARE	Flare	4/5/2018	Volatile Organic Compounds (VOC)	Tank-1	98	Design Calculation
FLARE	Flare	4/5/2018	Volatile Organic Compounds (VOC)	Tank-2	98	Design Calculation
AGI-1	Acid Gas Injection Unit	TBD	Volatile Organic Compounds (VOC)	A-CHP/A-CH2	100	Design Calculation
AGI-1	Acid Gas Injection Unit	TBD	Hydrogen Sulfide (H2)	A-CHP/A-CH2	100	Design Calculation
FL-1800-CHP	Flare	TBD	Volatile Organic Compounds (VOC)	Amine/process vents/pigging	98	Design Calculation
FL-1800-CHP	Flare	TBD	Hydrogen Sulfide (H2)	Amine/process vents/pigging	98	Design Calculation
FL-1800-CH2	Flare	TBD	Volatile Organic Compounds (VOC)	Amine/process vents/pigging	98	Design Calculation
FL-1800-CH2	Flare	TBD	Hydrogen Sulfide (H2)	Amine/process vents/pigging	98	Design Calculation
VCU	Vapor Combustion Unit	TBD	Volatile Organic Compounds (VOC)	TK-1907-CHP, TK-1908-CHP, TK-1907-CH2, TK-1908-CH2	98	Design Calculation
VCU	Vapor Combustion Unit	TBD	Hydrogen Sulfide (H2)	TK-1907-CHP, TK-1908-CHP, TK-1907-CH2, TK-1908-CH2	98	Design Calculation
AGI-2	Acid Gas Injection Unit	TBD	Volatile Organic Compounds (VOC)	A-CHP/A-CH2	100	Design Calculation
AGI-2	Acid Gas Injection Unit	TBD	Hydrogen Sulfide (H2)	A-CHP/A-CH2	100	Design Calculation

Control Equipment Unit No.	Control Equipment Description	Date Installed	Controlled Pollutant(s)	Controlling Emissions for Unit Number(s)[1]	Efficiency (% Control by Weight)	Method used to Estimate Efficiency

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

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

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

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

Unit No.	NOx		CO		VOC		SOx		PM[1]		PM10[1]		PM2.5[1]		H_2S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
FUG	-	-	-	-	-	12.52	-	-	-	-	-	-	-	-	0.00	0.00		
DEHY1	-	-	-	-	-	447.04	-	-	-	-	-	-	-	-	-	-		
DEHY2	-	-	-	-	-	447.04	-	-	-	-	-	-	-	-	-	-		
H-1	0.29	1.29	0.25	1.08	0.02	0.07	0.02	0.09	0.02	0.10	0.02	0.10	0.02	0.10	-	-		
H-2	0.29	1.29	0.25	1.08	0.02	0.07	0.02	0.09	0.02	0.10	0.02	0.10	0.02	0.10	-	-		
FLARE	0.09	0.39	0.18	0.79	-	-	0.01	0.03	-	-	-	-	-	-	0.00	0.00		
Tank-1	-	-	-	-	1.88	8.22	-	-	-	-	-	-	-	-	0.00	0.01		
Tank-2	-	-	-	-	1.88	8.22	-	-	-	-	-	-	-	-	0.00	0.01		
Tank-3	-	-	-	-	0.01	0.05	-	-	-	-	-	-	-	-	0.00	0.00		
Tank-4	-	-	-	-	0.01	0.05	-	-	-	-	-	-	-	-	-	-		
LOAD-1	-	-	-	-	2.51	0.14	-	-	-	-	-	-	-	-	-	-		
LOAD-2	-	-	-	-	0.00	0.00	-	-	-	-	-	-	-	-	-	-		
HAUL	-	-	-	-	-	-	-	-	0.35	0.03	0.35	0.03	0.04	0.00	0.00	0.00	0.00	-
A-CHP	--	--	--	--	23.31	102.10	--	--	--	--	--	--	--	--	9258.34	40551.52		
A-CH2	--	--	--	--	23.31	102.10	--	--	--	--	--	--	--	--	9258.34	40551.52		
DEHY-CHP	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
DEHY-CH2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
H-1701-CHP	2.67	11.68	2.70	11.84	0.39	1.73	0.05	0.21	0.54	2.38	0.54	2.38	0.54	2.38	-	-		
H-1702-CHP	2.67	11.68	2.70	11.84	0.39	1.73	0.05	0.21	0.54	2.38	0.54	2.38	0.54	2.38	-	-		
H-1703-CHP	2.67	11.68	2.70	11.84	0.39	1.73	0.05	0.21	0.54	2.38	0.54	2.38	0.54	2.38	-	-		
H-1704-CHP	1.30	5.68	1.31	5.75	0.19	0.84	0.02	0.10	0.26	1.16	0.26	1.16	0.26	1.16	-	-		
H-4701-CHP	0.48	2.08	0.48	2.11	0.07	0.31	0.01	0.04	0.10	0.42	0.10	0.42	0.10	0.42	-	-		
H-1701-CH2	2.67	11.68	2.70	11.84	0.39	1.73	0.05	0.21	0.54	2.38	0.54	2.38	0.54	2.38	-	-		
H-1702-CH2	2.67	11.68	2.70	11.84	0.39	1.73	0.05	0.21	0.54	2.38	0.54	2.38	0.54	2.38	-	-		
H-1703-CH2	2.67	11.68	2.70	11.84	0.39	1.73	0.05	0.21	0.54	2.38	0.54	2.38	0.54	2.38	-	-		
H-1704-CH2	1.30	5.68	1.31	5.75	0.19	0.84	0.02	0.10	0.26	1.16	0.26	1.16	0.26	1.16	-	-		
H-4701-CH2	0.48	2.08	0.48	2.11	0.07	0.31	0.01	0.04	0.10	0.42	0.10	0.42	0.10	0.42	-	-		
FL-1800-CHP	0.21	0.92	0.42	1.83	0.00	0.00	0.00	0.00	-	-	-	-	-	-	0.00	0.00		
FL-1800-CH2	0.21	0.92	0.42	1.83	0.00	0.00	0.00	0.00	-	-	-	-	-	-	0.00	0.00		
FUG-CHP	-	-	-	-	8.79	38.52	-	-	-	-	-	-	-	-	0.19	0.84		
FUG-CH2	-	-	-	-	8.79	38.52	-	-	-	-	-	-	-	-	0.19	0.84		
FL-1800-CHP	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
FL-1800-CH2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
TK-1907-CHP	-	-	-	-			-	-	-	-	-	-	-	-	-			

Unit No.	NOx		CO		VOC		SOx		PM[1]		PM10[1]		PM2.5[1]		H_2S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
TK-1908-CHP	-	-	-	-	12.25	53.65	-	-	-	-	-	-	-	-	-	15.38		
TK-1907-CH2	-	-	-	-			-	-	-	-	-	-	-	-	-			
TK-1908-CH2	-	-	-	-			-	-	-	-	-	-	-	-	-			
L-P	-	-	-	-	0.54	0.05	-	-	-	-	-	-	-	-	-	-		
VCU	0.01	0.03	0.01	0.06	0.00	0.00	0.00	0.00	-	-	-	-	-	-	0.00	0.00		
Total	**20.64**	**90.41**	**21.33**	**93.42**	**86.21**	**1271.01**	**0.40**	**1.76**	**4.39**	**17.69**	**4.39**	**17.69**	**4.07**	**17.67**	**18517.06**	**81120.10**		

[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).

* Indicates lb/hr is not appropriate for this unit

Table 2-E: Requested Allowable Emissions

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

Unit No.	NOx		CO		VOC		SOx		PM[1]		PM10[1]		PM2.5[1]		H_2S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
FUG	-	-	-	-	2.86	12.52	-	-	-	-	-	-	-	-	4.84E-05	2.12E-04	-	-
DEHY1	-	-	-	-	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-	-
DEHY2	-	-	-	-	0.00	0.00	-	-	-	-	-	-	-	-	-	-	-	-
H-1	0.29	1.29	0.25	1.08	0.02	0.07	0.02	0.09	0.02	0.10	0.02	0.10	0.02	0.10	-	-	-	-
H-2	0.29	1.29	0.25	1.08	0.02	0.07	0.02	0.09	0.02	0.10	0.02	0.10	0.02	0.10	-	--	-	-
FLARE	1.47	6.43	2.93	12.84	3.10	13.56	8.85	38.76	-	-	-	-	-	-	0.10	0.42	-	-
Tank-1	-	-	-	-	0.04	0.16	-	-	-	-	-	-	-	-	-	-	-	-
Tank-2	-	-	-	-	0.04	0.16	-	-	-	-	-	-	-	-	-	-	-	-
Tank-3	-	-	-	-	0.01	0.05	-	-	-	-	-	-	-	-	0.001	0.003	-	-
Tank-4	-	-	-	-	0.01	0.05	-	-	-	-	-	-	-	-	--	--	-	-
LOAD-1	-	-	-	-	2.51	0.14	-	-	-	-	-	-	-	-	-	-	-	-
LOAD-2	--	--	--	--	0.003	0.00	--	--	--	--	--	--	--	--	--	--	-	-
HAUL	-	-	-	-	-	-	-	-	0.35	0.03	0.35	0.03	0.04	0.003	--	--	--	--
A-CHP	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-	-
A-CH2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-	-
DEHY-CHP	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-	-
DEHY-CH2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-	-
H-1701-CHP	2.67	11.68	2.70	11.84	0.39	1.73	0.05	0.21	0.54	2.38	0.54	2.38	0.54	2.38	-	-	-	-
H-1702-CHP	2.67	11.68	2.70	11.84	0.39	1.73	0.05	0.21	0.54	2.38	0.54	2.38	0.54	2.38	-	-	-	-
H-1703-CHP	2.67	11.68	2.70	11.84	0.39	1.73	0.05	0.21	0.54	2.38	0.54	2.38	0.54	2.38	-	-	-	-
H-1704-CHP	1.30	5.68	1.31	5.75	0.19	0.84	0.02	0.10	0.26	1.16	0.26	1.16	0.26	1.16	-	-	-	-
H-4701-CHP	0.48	2.08	0.48	2.11	0.07	0.31	0.01	0.04	0.10	0.42	0.10	0.42	0.10	0.42	-	-	-	-
H-1701-CH2	2.67	11.68	2.70	11.84	0.39	1.73	0.05	0.21	0.54	2.38	0.54	2.38	0.54	2.38	-	-	-	-
H-1702-CH2	2.67	11.68	2.70	11.84	0.394	1.73	0.05	0.21	0.54	2.38	0.54	2.38	0.54	2.38	-	-	-	-
H-1703-CH2	2.67	11.68	2.70	11.84	0.39	1.73	0.05	0.21	0.54	2.38	0.54	2.38	0.54	2.38	-	-	-	-
H-1704-CH2	1.30	5.68	1.31	5.75	0.19	0.84	0.02	0.10	0.26	1.16	0.26	1.16	0.26	1.16	-	-	-	-
H-4701-CH2	0.48	2.08	0.48	2.11	0.07	0.31	0.01	0.04	0.10	0.42	0.10	0.42	0.10	0.42	-	-		
FL-1800-CHP	0.21	0.92	0.42	1.83	0.00	0.00	0.00	0.00	-	-	-	-	-	-	0.00	0.00	-	-
FL-1800-CH2	0.21	0.92	0.42	1.83	0.00	0.00	0.00	0.00	-	-	-	-	-	-	0.00	0.00	-	-
FUG-CHP	-	-	-	-	8.79	38.52	-	-	-	-	-	-	-	-	0.191	0.836	-	-
FUG-CH2	-	-	-	-	8.79	38.52	-	-	-	-	-	-	-	-	0.19	0.84	-	-
FL-1800-CHP	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FL-1800-CH2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Unit No.	NOx		CO		VOC		SOx		PM[1]		PM10[1]		PM2.5[1]		H_2S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
TK-1907-CHP	-	-	-	-	0.24	1.07	-	-	-	-	-	-	-	-	-	0.31	-	-
TK-1908-CHP	-	-	-	-			-	-	-	-	-	-	-	-	-		-	-
TK-1907-CH2	-	-	-	-			-	-	-	-	-	-	-	-	-		-	-
TK-1908-CH2	-	-	-	-			-	-	-	-	-	-	-	-	-		-	-
L-P	-	-	-	-	0.54	0.05	-	-	-	-	-	-	-	-	-	-	-	-
VCU	0.06	0.27	0.12	0.54	0.32	1.40	2.59	11.33	-	-	-	-	-	-	0.03	0.12	-	-
Totals	**22.08**	**96.69**	**24.19**	**105.96**	**30.18**	**118.99**	**11.83**	**51.82**	**4.39**	**17.69**	**4.39**	**17.69**	**4.07**	**17.67**	**0.51**	**2.52**	**--**	**--**

[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).

* Indicates lb/hr is not appropriate for this unit

2 Dehy-1 and DEHY-2 are controlled by the FLARE

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

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

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

Unit No.	NOx		CO		VOC		SOx		PM[2]		PM10[2]		PM2.5[2]		H_2S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
FL-1800-CHP	1790.77	46.72	3575.05	93.28	2.87	0.64	1257.60	37.87	-	-	-	-	-	-	13.63	0.41	-	-
FL-1800-CH2	1790.77		3575.05		2.87		1257.60		-	-	-	-	-	-	13.63		-	-
SSM-Plant	-	-	-	-	1,171.2	46.07	-	-	47.79	0.14259	6.78628	0.02029	0.67702	0.00203	0.06	0.0064	-	-
FLARE	7.08	0.04	14.14	0.09	12.60	0.07	0.03	0.000	-	-	-	-	-	-	4.50E-07	1.97E-06	-	-
SSM-NRU	-	-	-	-	315.76	7.58	-	-	-	-	-	-	-	-	-	-	-	-
SSM-CS					0.001	0.001									0.001	0.001		
Totals	3588.62	46.77	7164.23	93.37	1505.34	54.37	2515.22	37.87	47.79	0.14	6.79	0.02	0.68	0.002	27.33	0.42	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.

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

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

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

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

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

Table 2-H: Stack Exit Conditions

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

Stack Number	Serving Unit Number(s) from Table 2-A	Orientation (H=Horizontal V=Vertical)	Rain Caps (Yes or No)	Height Above Ground (ft)	Temp. (F)	Flow Rate		Moisture by Volume (%)	Velocity (ft/sec)	Inside Diameter (ft)
						(acfs)	(dscfs)			
H-1	H-1	V	No	20	400	--	--	--	1.37	3.50
H-2	H-2	V	No	20	400	--	--	--	1.37	3.50
FLARE	FLARE	V	No	20	1832	--	--	--	65.60	1.37
SSM-Flare	SSM-Flare	V	No	20	1832	--	--	--	65.60	1.37
H-1701-CHP	H-1701-CHP	V	No	25	723	--	964,160	--	48.05	4.00
H-1702-CHP	H-1702-CHP	V	No	25	723	--	964,160	--	48.05	4.00
H-1703-CHP	H-1703-CHP	V	No	25	723	--	964,160	--	48.05	4.00
H-1704-CHP	H-1704-CHP	V	No	25	475	--	406,096	--	50.56	2.50
H-4701-CHP	H-4701-CHP	V	No	25	400	--	173,770	--	18.63	2.50
H-1701-CH2	H-1701-CH2	V	No	25	723	--	964,160	--	48.05	4.00
H-1702-CH2	H-1702-CH2	V	No	25	723	--	964,160	--	48.05	4.00
H-1703-CH2	H-1703-CH2	V	No	25	723	--	964,160	--	48.05	4.00
H-1704-CH2	H-1704-CH2	V	No	25	475	--	406,096	--	50.56	2.50
H-4701-CH2	H-4701-CH2	V	No	20	400	--	173,770	--	18.63	2.50
VCU	Vapor Combustion Unit	V	No	25	1600	--	--	--	18.90	4.00
FL_1800_CHPM	Flare 1: MSS	V	No	157	1832	--	--	--	65.62	21.00
FL_1800_CH2M	Flare 2:MSS	V	No	157	1832	--	--	--	65.62	21.00
FL_1800_CHP	Flare 1: Steady State - Amine Control	V	No	150	1832	--	--	--	65.62	0.86
FL_1800_CH2	Flare 2: Steady State - Amine Control	V	No	150	1832	--	--	--	65.62	0.86

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

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

Stack No.	Unit No.(s)	Total HAPs ☑		n-hexane ☑ HAP or ☐ TAP		benzene ☑ HAP or ☐ TAP		toluene ☑ HAP or ☐ TAP		formaldehyde ☑ HAP or ☐ TAP		Ethylbenzene ☑ HAP or ☐ TAP		Xylene ☑ HAP or ☐ TAP		Provide Pollutant Name Here ☐ HAP or ☐ TAP		Provide Pollutant Name Here ☐ HAP or ☐ TAP	
		lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
FUG	FUG	0.15	0.66	0.11	0.44	0.03412	0.15	0.06	0.27	--	--	--	--	--	--				
DEHY1	DEHY1	--	--	--	--	--	--	--	--	--	--	--	--	--	--				
DEHY2	DEHY2	--	--	--	--	--	--	--	--	--	--	--	--	--	--				
H-1	H-1	0.0002	0.001	--	--	6.2E-06	2.71E-05	0.00001	4.38E-05	0.00022	0.00097	--	--	--	--				
H-2	H-2	0.0002	0.001	--	--	6.2E-06	2.71E-05	0.00001	4.38E-05	0.00022	0.00097	--	--	--	--				
FLARE	FLARE	0.48	2.12	0.05	0.23	0.29	1.27	0.13	0.56	--	--	0.002	0.00997	0.01	0.04				
Tank-1	Tank-1	--	--	--	--	--	--	--	--	--	--	--	--	--	--				
Tank-2	Tank-2	--	--	--	--	--	--	--	--	--	--	--	--	--	--				
Tank-3	Tank-3	-	0.02	--	--	--	--	--	--	--	--	--	--	--	--				
Tank-4	Tank-4	--	--	--	--	--	--	--	--	--	--	--	--	--	--				
LOAD-1	LOAD-1	-	0.01	0.00	0.00	0.06	0.00	0.08	0.00	--	--	0.00	0.00	0.02	0.00				
LOAD-2	LOAD-2	-	6.82E-07	--	--	--	--	--	--	--	--	--	--	--	--				
HAUL	HAUL	--	--	--	--	--	--	--	--	--	--	--	--	--	--				
SSM-CS	SSM-CS	-	1.59E-05	--	--	--	--	--	--	--	--	--	--	--	--				
A-CHP	A-CHP	--	--	--	--	--	--	--	--	--	--	--	--	--	--				
A-CH2	A-CH2	--	--	--	--	--	--	--	--	--	--	--	--	--	--				
DEHY-CHP	DEHY-CHP	--	--	--	--	--	--	--	--	--	--	--	--	--	--				
DEHY-CH2	DEHY-CH2	--	--	--	--	--	--	--	--	--	--	--	--	--	--				
H-1701-CHP	H-1701-CHP	0.01	0.03	--	--	0.00	0.00	0.00	0.00	0.01	0.02	--	--	--	--				
H-1702-CHP	H-1702-CHP	0.01	2.52E-02	--	--	0.00015	0.000659	0.00024	0.001066	0.00537	0.02352	--	--	--	--				
H-1703-CHP	H-1703-CHP	0.01	0.03	--	--	0.00	0.00	0.00	0.00	0.01	0.02	--	--	--	--				
H-1704-CHP	H-1704-CHP	0.01	1.23E-02	--	--	7.3E-05	0.00032	0.00012	0.000518	0.00261	0.01143	--	--	--	--				
H-4701-CHP	H-4701-CHP	0.00	0.00	--	--	0.00	0.00	0.00	0.00	0.00	0.00	--	--	--	--				
H-1701-CH2	H-1701-CH2	0.01	2.52E-02	--	--	0.00015	0.000659	0.00024	0.001066	0.00537	0.02352	--	--	--	--				
H-1702-CH2	H-1702-CH2	0.01	0.03	--	--	0.00	0.00	0.00	0.00	0.01	0.02	--	--	--	--				
H-1703-CH2	H-1703-CH2	0.01	2.52E-02	--	--	0.00015	0.000659	0.00024	0.001066	0.00537	0.02352	--	--	--	--				
H-1704-CH2	H-1704-CH2	0.00	0.01	--	--	0.00	0.00	0.00	0.00	0.00	0.01	--	--	--	--				
H-4701-CH2	H-4701-CH2	0.00	4.19E-03	--	--	2.7E-05	0.000117	4.3E-05	0.00019	0.00096	0.00419	--	--	--	--				
FL-1800-CHP	FL-1800-CHP	0.57	0.13	--	--	--	--	--	--	--	--	--	--	--	--				
FL-1800-CH2	FL-1800-CH2	0.57	1.29E-01	--	--	--	--	--	--	--	--	--	--	--	--				
FUG-CHP	FUG-CHP	0.55	2.41	0.31	1.31	0.06	0.26	0.11	0.47	--	--	--	--	--	--				

Stack No.	Unit No.(s)	Total HAPs ☑		n-hexane HAP or ☐ TAP ☑		benzene HAP or ☐ TAP ☑		toluene HAP or ☐ TAP ☑		formaldehyde HAP or ☐ TAP ☑		Ethylbenzene ☑ HAP or ☐ TAP		Xylene ☑ HAP or ☐ TAP		Provide Pollutant Name Here ☐ HAP or ☐ TAP		Provide Pollutant Name Here ☐ HAP or ☐ TAP	
		lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
FUG-CH2	FUG-CH2	0.55	2.41E+00	0.30534	1.3090746	0.05898	0.25835	0.10738	0.470309	--	--	--	--	--	--				
TK-1907-CHP	TK-1907-CHP	-	0.89	--	--	--	0.61	--	0.26	--	--	--	--	--	--				
TK-1908-CHP	TK-1908-CHP	-	0.00E+00	--	--	--	0.610014	--	0.258068	--	--	--	--	--	--				
TK-1907-CH2	TK-1907-CH2	-	0.00	--	--	--	0.61	--	0.26	--	--	--	--	--	--				
TK-1908-CH2	TK-1908-CH2	-	0.00E+00	--	--	--	0.610014	--	0.258068	--	--	--	--	--	--				
L-P	L-P	-	-	--	--	--	--	--	--	--	--	--	--	--	--				
VCU	VCU	0.29	1.28	0.00014	0.0006244	0.21	0.91	0.08	0.345449	--	--	0.003	0.01	0.004	0.02				
SSM-Plant	SSM	20.01	0.38	0.14	6.955E-05	0.05	0.00	0.03	1.26E-05	--	--	1.87	0.004	10.71	0.02				
MSSFUG	MSSFUG	0.00	0.00	--	--	--	--	--	--	--	--	--	--	--	--				
Totals:		23.23	10.62	0.92	3.28	0.76	5.30	0.59	3.16	0.04	0.17	1.88	0.03	10.74	0.07				

Table 2-J: Fuel

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

Unit No.	Fuel Type (low sulfur Diesel, ultra low sulfur diesel, Natural Gas, Coal, …)	Fuel Source: purchased commercial, pipeline quality natural gas, residue gas, raw/field natural gas, process gas (e.g. SRU tail gas) or other	Specify Units				
			Lower Heating Value	Hourly Usage	Annual Usage	% Sulfur	% Ash
H-1	Natural gas	residue gas	1020 BTU/SCF	0.003 MMSCF/hr	25.8 MMSCF/yr	2.00	N/A
H-2	Natural gas	residue gas	1020 BTU/SCF	0.003 MMSCF/hr	25.8 MMSCF/yr	2.00	N/A
FLARE	Natural gas	residue gas	1020 BTU/SCF	0.001 MMSCF/hr	5.04 MMSCF/yr	2.00	N/A
H-1701-CHP	Natural gas	residue gas	1020 BTU/SCF	0.096 MMSCF/hr	841.8 MMSCF/yr	2.00	N/A
H-1702-CHP	Natural gas	residue gas	1020 BTU/SCF	0.096 MMSCF/hr	841.8 MMSCF/yr	2.00	N/A
H-1703-CHP	Natural gas	residue gas	1021 BTU/SCF	0.096 MMSCF/hr	841.8 MMSCF/yr	2.00	N/A
H-1704-CHP	Natural gas	residue gas	1020 BTU/SCF	0.033 MMSCF/hr	290.8 MMSCF/yr	2.00	N/A
H-4701-CHP	Natural gas	residue gas	1020 BTU/SCF	0.014 MMSCF/hr	123.1 MMSCF/yr	2.00	N/A
H-1701-CH2	Natural gas	residue gas	1020 BTU/SCF	0.096 MMSCF/hr	841.8 MMSCF/yr	2.00	N/A
H-1702-CH2	Natural gas	residue gas	1020 BTU/SCF	0.096 MMSCF/hr	841.8 MMSCF/yr	2.00	N/A
H-1703-CH2	Natural gas	residue gas	1020 BTU/SCF	0.096 MMSCF/hr	841.8 MMSCF/yr	2.00	N/A
H-1704-CH2	Natural gas	residue gas	1020 BTU/SCF	0.033 MMSCF/hr	290.8 MMSCF/yr	2.00	N/A
H-4701-CH2	Natural gas	residue gas	1020 BTU/SCF	0.014 MMSCF/hr	123.1 MMSCF/yr	2.00	N/A
FL-1800-CHP	Natural gas	residue gas	1020 BTU/SCF	0.001 MMSCF/hr	5.04 MMSCF/yr	2.00	N/A
FL-1800-CH2	Natural gas	residue gas	1020 BTU/SCF	0.001 MMSCF/hr	5.04 MMSCF/yr	2.00	N/A

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

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

Tank No.	SCC Code	Material Name	Composition	Liquid Density (lb/gal)	Vapor Molecular Weight (lb/lb*mol)	Average Storage Conditions		Max Storage Conditions	
						Temperature (°F)	True Vapor Pressure (psia)	Temperature (°F)	True Vapor Pressure (psia)
Tank-1	40400311	Condensate	Condensate	5.9	44.34	63.2	6.82	95	4.69
Tank-2	40400311	Condensate	Condensate	5.9	44.34	63.2	6.82	95	4.69
Tank-3	40400311	Produced Water	Produced Water	8.14	50.14	63.2	0.82	95	0.42
Tank-4	40400311	Produced Water	Produced Water	8.14	50.14	63.2	0.82	95	0.42
TK-1907-CHP	40400315	Produced Water	Produced Water	8.14	50.14	63.2	0.82	95	0.42
TK-1908-CHP	40400315	Produced Water	Produced Water	8.14	50.14	63.2	0.82	95	0.42
TK-1907-CH2	40400315	Produced Water	Produced Water	8.14	50.14	63.2	0.82	95	0.42
TK-1908-CH2	40400315	Produced Water	Produced Water	8.14	50.14	63.2	0.82	95	0.42

Table 2-L: Tank Data

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

Tank No.	Date Installed	Materials Stored	Seal Type (refer to Table 2-LR below)	Roof Type (refer to Table 2-LR below)	Capacity		Diameter (M)	Vapor Space (M)	Color (from Table VI-C)		Paint Condition (from Table VI-C)	Annual Throughput (gal/yr)	Turn- overs (per year)
					(bbl)	(M^3)			Roof	Shell			
Tank-1		Condensate		Vertical-Fixed Roof	400-bbl		12		white	white		709,624	42.24
Tank-2		Condensate		Vertical-Fixed Roof	400-bbl		12		white	white		709,624	42.24
Tank-3		Produced Water		Vertical-Fixed Roof	400-bbl		12		white	white		412,374	24.55
Tank-4		Produced Water		Vertical-Fixed Roof	400-bbl		12		white	white		412,374	24.55
TK-1907-CHP		Produced Water		Vertical-Fixed Roof	500-bbl		12		white	white		8,657,924	412.28
TK-1908-CHP		Produced Water		Vertical-Fixed Roof	500-bbl		12		white	white			
TK-1907-CH2		Produced Water		Vertical-Fixed Roof	500-bbl		12		white	white			
TK-1908-CH2		Produced Water		Vertical-Fixed Roof	500-bbl		12		white	white			

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

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

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

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

Material Processed				Material Produced			
Description	**Chemical Composition**	**Phase (Gas, Liquid, or Solid)**	**Quantity (specify units)**	**Description**	**Chemical Composition**	**Phase**	**Quantity (specify units)**
A-CHP	Natural gas	Gas	350 MMSCFD	Natural Gas	Natural gas	gas	350 MMSCFD
A-CH2	Natural gas	Gas	350 MMSCFD	Natural Gas	Natural gas	gas	350 MMSCFD
DEHY-1	Natural gas	Gas	150 MMSCFD	Natural Gas	Natural gas	gas	150 MMSCFD
DEHY-2	Natural gas	Gas	150 MMSCFD	Natural Gas	Natural gas	gas	150 MMSCFD
DEHY-CHP	Natural gas	Gas	350 MMSCFD	Natural Gas	Natural gas	gas	350 MMSCFD
DEHY-CH2	Natural gas	Gas	350 MMSCFD	Natural Gas	Natural gas	gas	350 MMSCFD

Table 2-N: CEM Equipment

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

Stack No.	Pollutant(s)	Manufacturer	Model No.	Serial No.	Sample Frequency	Averaging Time	Range	Sensitivity	Accuracy

Table 2-O: Parametric Emissions Measurement Equipment

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

Unit No.	Parameter/Pollutant Measured	Location of Measurement	Unit of Measure	Acceptable Range	Frequency of Maintenance	Nature of Maintenance	Method of Recording	Averaging Time

Table 2-P: Greenhouse Gas Emissions

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

☐ By checking this box, the applicant acknowledges the total CO2e emissions are less than 75,000 tons per year.

		CO_2 ton/yr	N_2O ton/yr	CH_4 ton/yr	SF_6 ton/yr	PFC/HFC ton/yr[2]									Total GHG Mass Basis ton/yr[4]	Total CO_2e ton/yr[5]
Unit No.	**GWPs [1]**	**1**	**298**	**25**	**22,800**	**footnote 3**										
H-1	**mass GHG**	1,537.1	0.0	0.0											1,537.1	
	CO_2e	1,537.1	0.9	0.7												1,538.7
H-2	**mass GHG**	1,537.1	0.0	0.0											1,537.1	
	CO_2e	1,537.1	0.9	0.7												1,538.7
DEHY-1	**mass GHG**	54.7	--	10.4											65.1	
	CO_2e	54.7	--	260.2												314.9
DEHY-2	**mass GHG**	54.7	--	10.4											65.1	
	CO_2e	54.7	--	260.2												314.9
LOAD-1	**mass GHG**			0.9											0.9	
	CO_2e	0.0	0.0	23.3												23.3
LOAD-2	**mass GHG**			0.2											0.2	
	CO_2e	0.0	0.0	5.4												5.4
FLARE	**mass GHG**	60.3	0.0	11.5											71.7	
	CO_2e	60.3	0.0	286.8												347.1
H-1701-CHP	**mass GHG**	37,422.8	0.1	0.7											37,423.5	
	CO_2e	37,422.8	21.0	17.6												37,461.4
H-1702-CHP	**mass GHG**	37,422.8	0.1	0.7											37,423.5	
	CO_2e	37,422.8	21.0	17.6												37,461.4
H-1703-CHP	**mass GHG**	37,422.8	0.1	0.7											37,423.5	
	CO_2e	37,422.8	21.0	17.6												37,461.4

Table 2-P: Greenhouse Gas Emissions

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

☐ By checking this box, the applicant acknowledges the total CO2e emissions are less than 75,000 tons per year.

		CO_2 ton/yr	N_2O ton/yr	CH_4 ton/yr	SF_6 ton/yr	PFC/HFC ton/yr[2]									Total GHG Mass Basis ton/yr[4]	Total CO_2e ton/yr[5]
Unit No.	**GWPs [1]**	**1**	**298**	**25**	**22,800**	**footnote 3**										
H-1	**mass GHG**	1,537.1	0.0	0.0											1,537.1	
	CO_2e	1,537.1	0.9	0.7												1,538.7
H-1704-CHP	**mass GHG**	16,500.6	0.3	0.0											16,500.9	
	CO_2e	16,500.6	92.7	0.8												16,594.0
H-4701-CHP	**mass GHG**	6,669.4	0.0	0.1											6,669.5	
	CO_2e	6,669.4	3.7	3.1												6,676.3
H-1701-CH2	**mass GHG**	37,422.8	0.1	0.7											37,423.5	
	CO_2e	37,422.8	21.0	17.6												37,461.4
H-1702-CH2	**mass GHG**	37,422.8	0.1	0.7											37,423.5	
	CO_2e	37,422.8	21.0	17.6												37,461.4
H-1703-CH2	**mass GHG**	37,422.8	0.1	0.7											37,423.5	
	CO_2e	37,422.8	21.0	17.6												37,461.4
H-1704-CH2	**mass GHG**	18,188.8	0.0	0.3											18,189.2	
	CO_2e	18,188.8	10.2	8.6												18,207.6
H-4701-CH2	**mass GHG**	6,669.4	0.0	0.1											6,669.5	
	CO_2e	6,669.4	3.7	3.1												6,676.3
VCU	**mass GHG**	229.8	0.0	0.0											229.8	
	CO_2e	229.8	0.1	0.1												230.0
FL-1800-CHP	**mass GHG**	41,391.4	0.0	3.9											41,395.3	
	CO_2e	41,391.4	0.0	97.9												41,489.2
FL-1800-CH2	**mass GHG**	41,391.4	0.0	3.9											41,395.3	
	CO_2e	41,391.4	0.0	97.9												41,489.2
Total	**mass GHG**	358,821.0	0.8	46.2											358,867.9	
	CO_2e	358,821.0	238.3	1,154.6												360,213.9

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

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

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

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

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

Section 3

Application Summary

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

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

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

Targa Resources, LLC (Targa) owns and operates the Copperhead Compressor Station located near Malaga in Lea County, NM. The site is current authorized under GCP 7712. Targa is proposing to authorize the installation of proposed processing trains 1 and 2 and to change the name to the Copperhead Gas Plant.

The primary function of the Copperhead Gas Processing Plant is to separate natural gas (methane) from heavier (liquid) hydrocarbons, so that the gas can meet pipeline specifications. The plant has been designated a primary Standard Industrial Classification (SIC) Code of 1321. The gas is treated to remove CO_2, H_2S, water and heavy (liquid) hydrocarbons from the gas stream. Stabilized condensate is removed from the site via pipeline with the option to truck it out as needed. Produced water is trucked out from the site.

Following is a summary of changes proposed in this application:

- Increase site processing throughput.
- Construction of proposed processing trains 1 and 2.
- Increase permit limits to allow the ability to process gas containing up to 7,500 ppm H_2S.

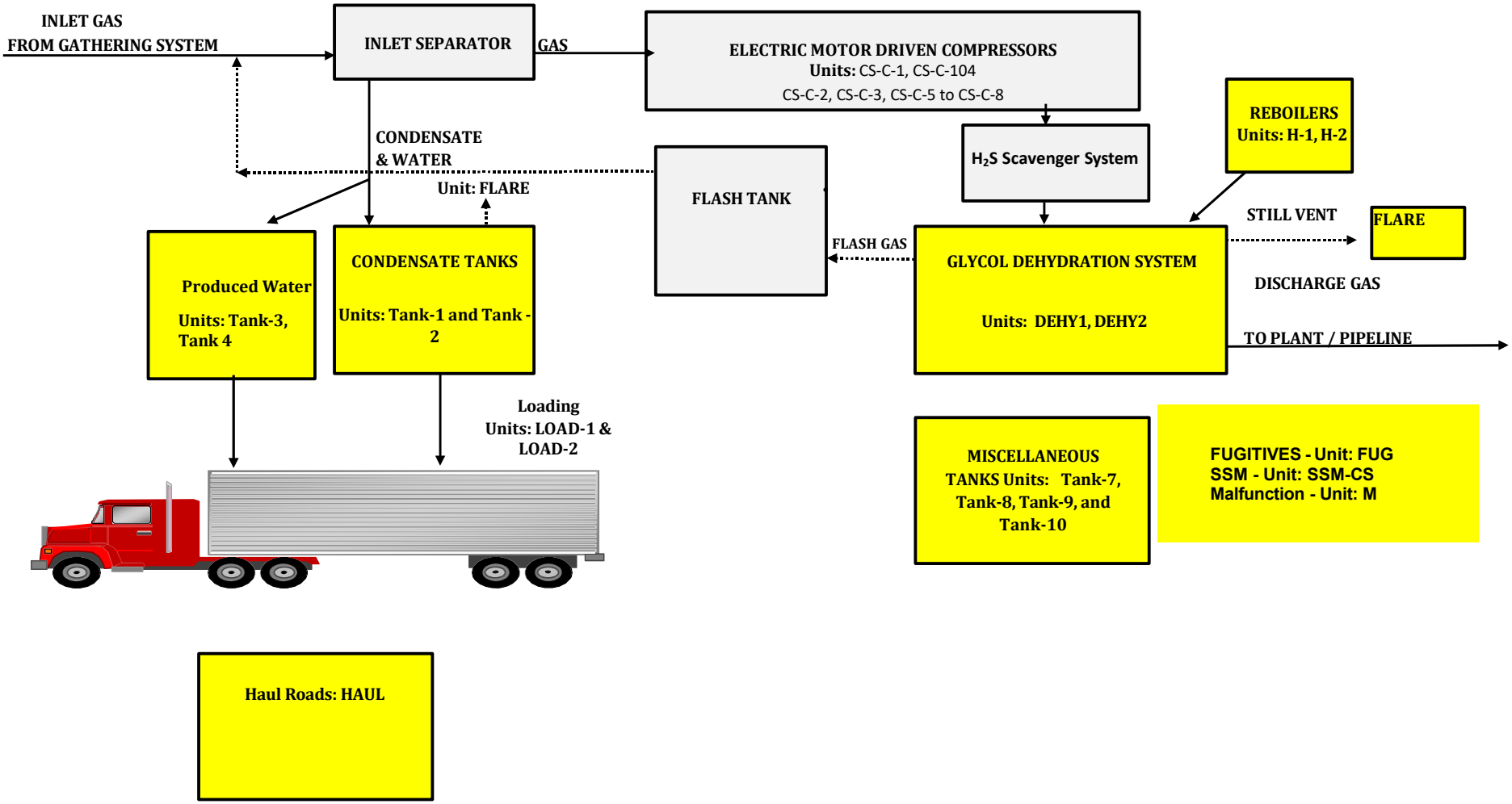
This project will not trigger Prevention of Significant Deterioration (PSD) review, as the facility is currently a minor NSR source and the proposed emission changes are less than 250 tons per year (tpy) for each criteria pollutant and will remain an area source of HAPs.

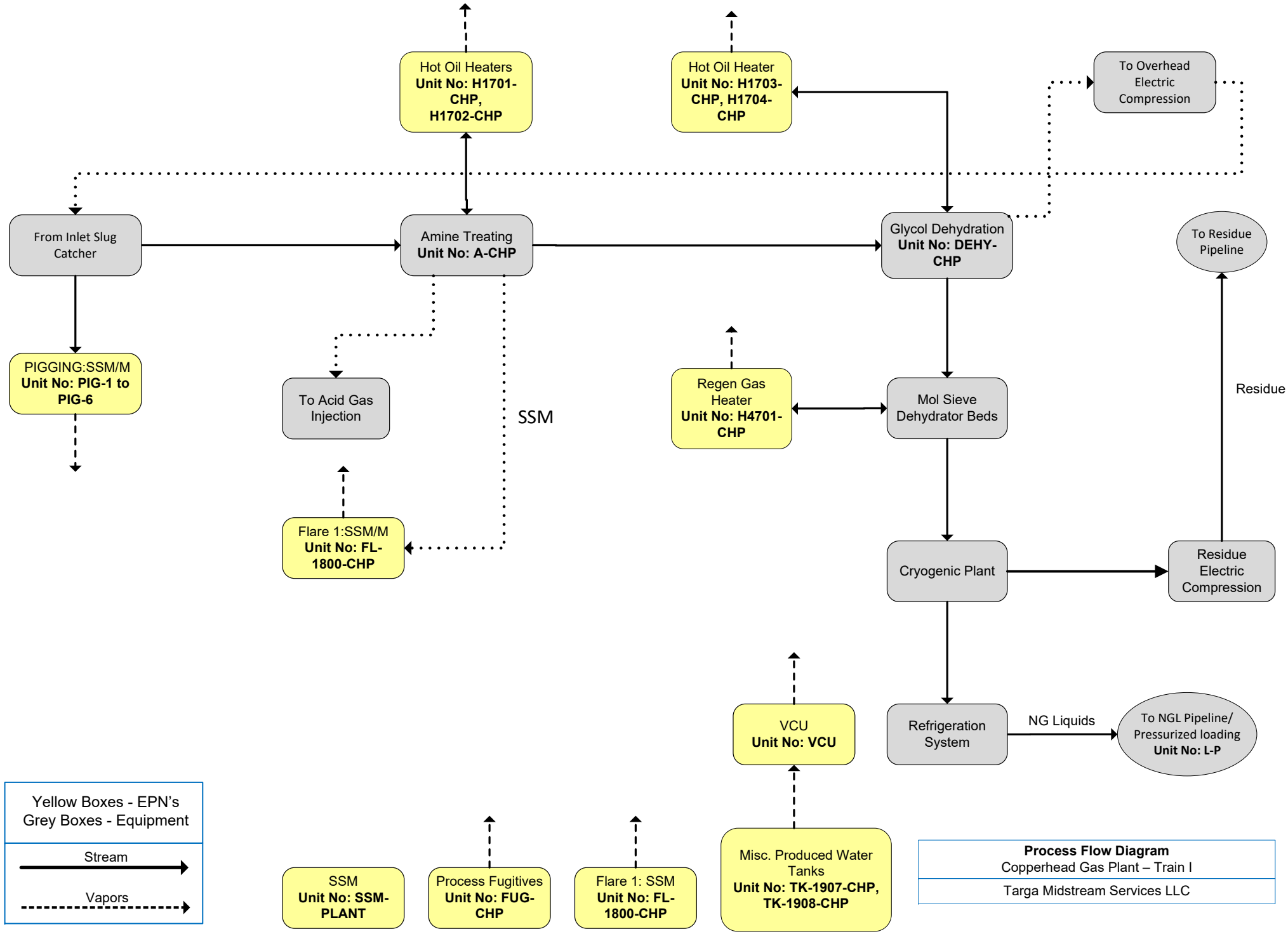
Section 4

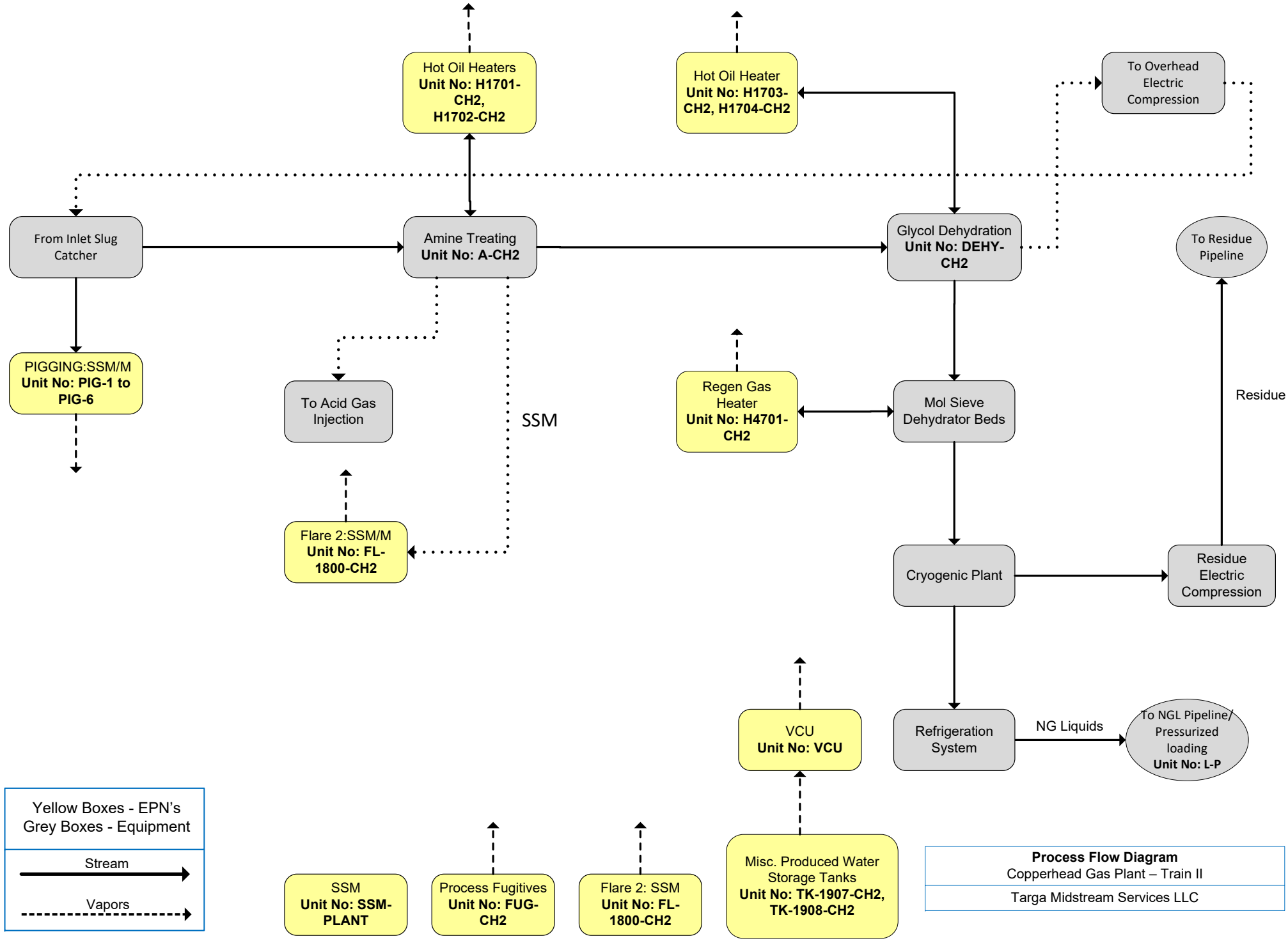
Process Flow Sheet

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.

Targa Midstream Services, LLC
Copperhead Compressor Station




Hot Oil Heaters
Unit No: H1701-CHP, H1702-CHP
Hot Oil Heater
Unit No: H1703-CHP, H1704-CHP
To Overhead Electric Compression
From Inlet Slug Catcher
Amine Treating
Unit No: A-CHP
Glycol Dehydration
Unit No: DEHY-CHP
To Residue Pipeline
PIGGING:SSM/M
Unit No: PIG-1 to PIG-6
To Acid Gas Injection
SSM
Regen Gas Heater
Unit No: H4701-CHP
Mol Sieve Dehydrator Beds
Residue Ga
Flare 1:SSM/M
Unit No: FL-1800-CHP
Cryogenic Plant
Residue Electric Compression
VCU
Unit No: VCU
Refrigeration System
NG Liquids
To NGL Pipeline/ Pressurized loading
Unit No: L-P
Yellow Boxes - EPN's
Grey Boxes - Equipment
Stream
Vapors
SSM
Unit No: SSM-PLANT
Process Fugitives
Unit No: FUG-CHP
Flare 1: SSM
Unit No: FL-1800-CHP
Misc. Produced Water Tanks
Unit No: TK-1907-CHP, TK-1908-CHP
Process Flow Diagram
Copperhead Gas Plant – Train I
Targa Midstream Services LLC

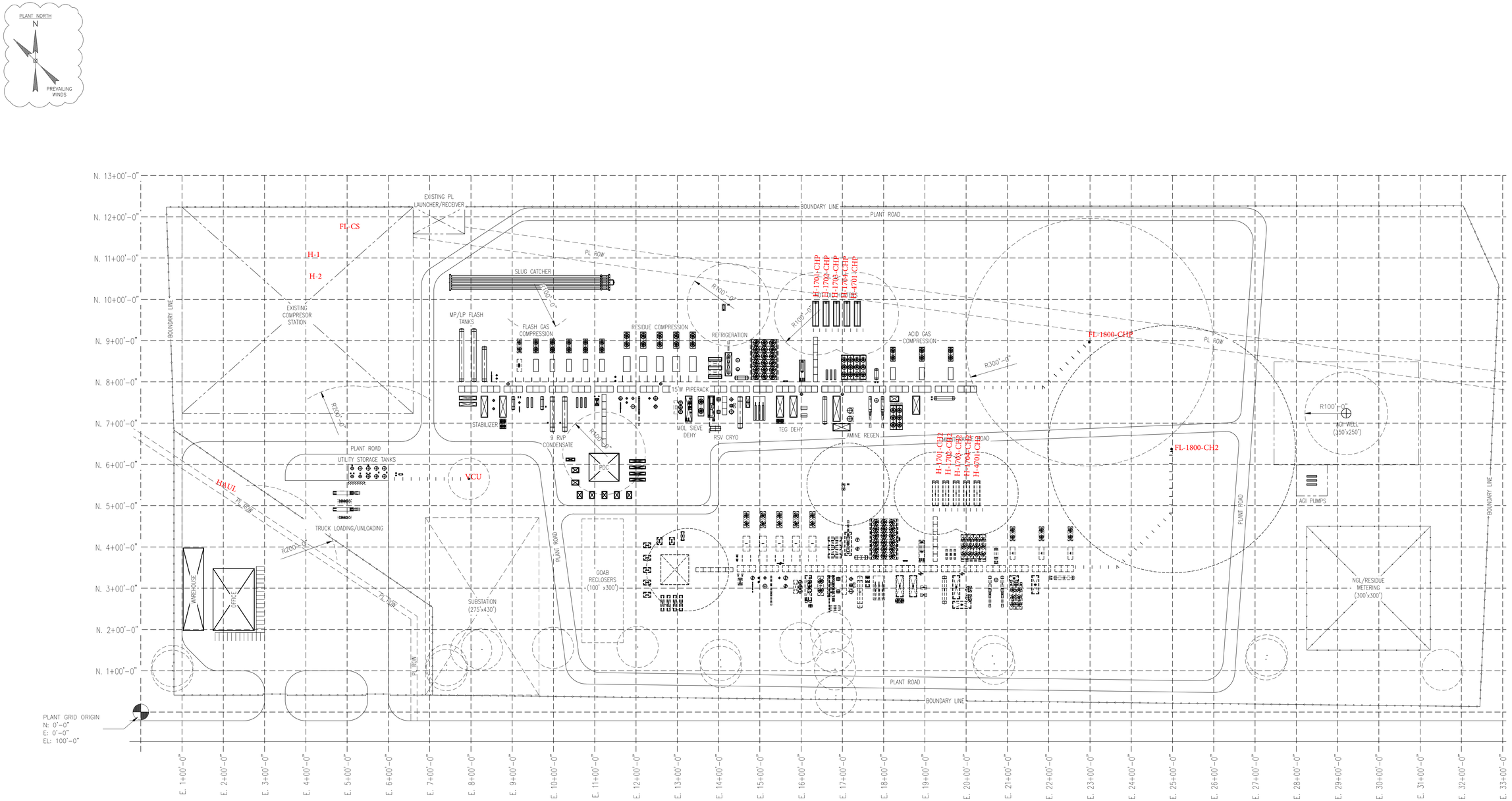

Hot Oil Heaters
Unit No: H1701-CH2, H1702-CH2
Hot Oil Heater
Unit No: H1703-CH2, H1704-CH2
To Overhead Electric Compression
From Inlet Slug Catcher
Amine Treating
Unit No: A-CH2
Glycol Dehydration
Unit No: DEHY-CH2
To Residue Pipeline
PIGGING:SSM/M
Unit No: PIG-1 to PIG-6
To Acid Gas Injection
SSM
Regen Gas Heater
Unit No: H4701-CH2
Mol Sieve Dehydrator Beds
Residue Gas
Flare 2:SSM/M
Unit No: FL-1800-CH2
Cryogenic Plant
Residue Electric Compression
VCU
Unit No: VCU
Refrigeration System
NG Liquids
To NGL Pipeline/ Pressurized loading
Unit No: L-P
Yellow Boxes - EPN's
Grey Boxes - Equipment
Stream
Vapors
SSM
Unit No: SSM-PLANT
Process Fugitives
Unit No: FUG-CH2
Flare 2: SSM
Unit No: FL-1800-CH2
Misc. Produced Water Storage Tanks
Unit No: TK-1907-CH2, TK-1908-CH2
Process Flow Diagram
Copperhead Gas Plant – Train II
Targa Midstream Services LLC

Section 5

Plot Plan Drawn to Scale

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

A plot plan is attached. Access and haul roads are indicated in green, the facility property boundary is indicated in blue, and the area which will be restricted to public access is indicated in red.



* – H.P. GRADE EL. TO BE BASED ON 100'-0"
* – T.O.C./P.O.S. EL. TO BE 101'-0"(U.O.N.)
* – FOUNDATION DESIGN/SUPPLIED BY OTHERS

REFERENCE DWGS.	REV	DESCRIPTION	DWN	CHKD	DATE

REV	DESCRIPTION	DWN	CHKD	DATE
D	RE-ISSUED FOR INFORMATION	BCH	–	06/20/25
C	RE-ISSUED FOR INFORMATION	BCH	–	06/06/25
B	RE-ISSUED FOR INFORMATION	BCH	–	05/02/25
A	ISSUED FOR INFORMATION	BCH	–	04/17/25

SCALE:	1"=110'
DWN BY:	BCH
CHKD BY:	XXX
FINAL CK:	XXX
ENGR.:	XXX
APPRV:	XXX
APPRV:	XXX
DATE	04/17/25
	XX/XX/XX
	XX/XX/XX
	XX/XX/XX
	XX/XX/XX
	XX/XX/XX

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PREPARED BY: OPERO ENERGY – HOUSTON, TX

PROJECT NUMBER: 029395001

PLANT NAME
COPPERHEAD CRYO PLANT
JAL, NEW MEXICO

TARGA

DRAWING NUMBER
1542F-100-E1

CAD FILE NAME
CHD100E1

REVISION
D

PLOT PLAN
275 MMSCFD RSV
COPPERHEAD CRYO PLANT

PLOT DATE: –

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.

Heaters and Reboilers
The facility will be equipped with several heaters and reboilers of various heat input capacities. For units H-1, H-2, H-1704-CHP, H-4701-CHP, H-1704-CH2, H-4701-CH2 AP-42 Chapter 1.4 *Natural Gas Combustion* was used to determine emissions of Nitrogen oxides (NO_x), carbon monoxide (CO)volatile organic compounds (VOC), particulate matter (PM), and hazardous air pollutants (HAPs). For units H-1701-CHP, H-1702-CHP, H-1701-CH2, H-1702-CH2 AP-42 Chapter 1.4 *Natural Gas Combustion* was used to determine emissions of volatile organic compounds (VOC), particulate matter (PM), and hazardous air pollutants (HAPs). Nitrogen oxides (NO_x) and carbon monoxide (CO) were determined based on manufacturer guarantees. Sulfur dioxide emissions were calculated stoichiometrically assuming that the natural gas used as fuel in the heaters and reboilers contains a maximum H_2S content of 5 ppm based on pipeline specifications.

For units H-1701-CHP, H-1702-CHP, H-1701-CH2, H-1702-CH2, H-1703-CHP, H-1703-CH2, H-1704-CHP, H-1704-CH2, H-4701-CHP, and H-4701-CH2 manufacturer specifications were used to determine emissions of nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compounds (VOC), and particulate matter (PM). AP-42 Chapter 1.4 *Natural Gas Combustion* was used to determine emissions of and hazardous air pollutants (HAPs). Sulfur dioxide emissions were calculated stoichiometrically assuming that the natural gas used as fuel in the heaters and reboilers contains a maximum H_2S content of 4 ppm based on pipeline specifications.

For units H-1, and H-2, , AP-42 Chapter 1.4 *Natural Gas Combustion* was used to determine emissions of carbon monoxide (CO), volatile organic compounds (VOC), particulate matter (PM), and hazardous air pollutants (HAPs). Sulfur dioxide emissions were calculated stoichiometrically assuming that the natural gas used as fuel in the heaters and reboilers contains a maximum H_2S content of 5 ppm based on pipeline specifications. Emissions of nitrogen oxides (NO_x) are based on the emission factor presented in 20.2.50.119.B(1) NMAC to comply with 20.2.50.119.B(3) NMAC as these units will be considered new units and must comply upon startup.

Greenhouse gas emissions from all heaters and reboilers were calculated using 40 CFR 98 Subpart C Table C-1 and Table C-2.

TEG Glycol Dehydrators – Compressor Station
BR&E ProMax was used to determine emissions from the glycol still vents (DEHY1 and DEHY2) and non-condensable overheads from the BTEX condensers. The glycol dehydrators associated with the compressor station are controlled by the flare (FLARE).

TEG Glycol Dehydrators – Gas Plant
BR&E ProMax was used to determine emissions from the glycol still vents (DEHY-CHP and DEHY-CH2) and non-condensable overheads from the BTEX condensers. The glycol dehydrators associated with the gas plant are routed back to the inlet with a VRU as part of closed loop system.

Amine Units
BR&E ProMax was used to determine emissions from the amine units. Contactor overheads are routed to the back to the system for further treatment. The regenerator overheads are routed to the acid gas injection (AGI) well for injection. The Flares (FL-1800-CHP and FL-1800-CH2) control the amine units if the AGI is off line for well maintenance.

Flares and Vapor Combustors
The flares at the facility (FLARE, FL-1800-CHP and FL-1800-CH2, VCU) will flare both inlet and residue gas. The expected composition and maximum expected volumes of inlet gas and residue gas were used as the basis of the flare calculation. TNRCC RG-109 flare emission factors for low Btu gas were used to calculate emissions of nitrogen oxides (NO_x) and carbon monoxide (CO). VOC, H_2S, and SO_2 emissions are calculated based on the VOC and H_2S content of the inlet and residue gas. An assumed 98% destruction efficiency is applied to the VOC and H_2S emissions.

Greenhouse gas emissions from the flares were calculated using 40 CFR 98 Subpart C Table C-1 and Table C-2 with the methodology outlined in 40 CFR 98.233(n).

Condensate Storage Tanks
Emissions from various storage tanks were determined using BR&E ProMax.

Condensate Loading
Condensate loading emissions, (LOAD-1 & LOAD-2) were calculated using the loading loss equation and variables from AP-42 Section 5.2, *Transportation and Marketing of Petroleum Liquids*. True vapor pressure of loaded liquid, molecular weight of vapor, temperature of bulk liquid, and volatile organic compound (VOC), hazardous air pollutants (HAP), and hydrogen sulfide (H_2S) mass percentage were determined with BR&E ProMax.

Fugitives
The emissions from fugitive components associated with this project are calculated using emission factors from Table 2-4 of the EPA Protocol for Equipment Leak Emission estimates, November 1995. Site specific analyses for inlet gas, residue gas, and condensate were used.

Haul Road Emissions
Unpaved haul road emissions were calculated using constants from AP-42 Table 13.2.2-2 and the methodology outlined in AP-42 Chapter 13.2.2.

Miscellaneous MSS
Miscellaneous MSS emissions include routine pigging activities, routine replacement of glycol solution used in dehydration units, routine replacement of solution used in amine units, use of aerosol lubricants, piping components, and calibration activities. Routine pigging emissions are controlled by a flare (FL-1800-CHP)

MSS Blowdowns
MSS Blowdown emissions include venting emissions from blowdowns, starter vents, and any gas operated controllers present at the facility, if any.

Section 6

All Calculations

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For units H-1701-CHP, H-1702-CHP, H-1701-CH2, H-1702-CH2, H-1703-CHP, H-1703-CH2, H-1704-CHP, H-1704-CH2, H-4701-CHP, and H-4701-CH2 manufacturer specifications were used to determine emissions of nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compounds (VOC), and particulate matter (PM). AP-42 Chapter 1.4 *Natural Gas Combustion* was used to determine emissions of and hazardous air pollutants (HAPs). Sulfur dioxide emissions were calculated stoichiometrically assuming that the natural gas used as fuel in the heaters and reboilers contains a maximum H_2S content of 4 ppm based on pipeline specifications.

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Greenhouse gas emissions from all heaters and reboilers were calculated using 40 CFR 98 Subpart C Table C-1 and Table C-2.

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BR&E ProMax was used to determine emissions from the glycol still vents (DEHY-CHP and DEHY-CH2) and non-condensable overheads from the BTEX condensers. The glycol dehydrators associated with the gas plant are routed back to the inlet with a VRU as part of closed loop system. The glycol dehydrators associated with the compressor station are controlled by the flare (FLARE).

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BR&E ProMax was used to determine emissions from the amine units. Contactor overheads are routed to the back to the system for further treatment. The regenerator overheads are routed to the acid gas injection (AGI) well for injection. The Flares (FL-1800-CHP and FL-1800-CH2) control the amine units if the AGI is off line for well maintenance.

Flares and Vapor Combustors

The flares at the facility (FLARE, FL-1800-CHP and FL-1800-CH2, VCU) will flare both inlet and residue gas. The expected composition and maximum expected volumes of inlet gas and residue gas were used as the basis of the flare calculation. TNRCC RG-109 flare emission factors for low Btu gas were used to calculate emissions of nitrogen oxides (NO_x) and carbon monoxide

(CO). VOC, H_2S, and SO_2 emissions are calculated based on the VOC and H_2S content of the inlet and residue gas. An assumed 98% destruction efficiency is applied to the VOC and H_2S emissions.

Greenhouse gas emissions from the flares were calculated using 40 CFR 98 Subpart C Table C-1 and Table C-2 with the methodology outlined in 40 CFR 98.233(n).

Condensate Storage Tanks
Emissions from various storage tanks were determined using BR&E ProMax.

H2S Scavenger Storage Tanks
Emissions from the H_2S scavenger storage tanks were determined using BR&E ProMax. Emissions from the H_2S scavenger storage tanks are uncontrolled and are vented to the atmosphere.

Condensate Loading
Condensate loading emissions were calculated using the loading loss equation and variables from AP-42 Section 5.2, *Transportation and Marketing of Petroleum Liquids*. True vapor pressure of loaded liquid, molecular weight of vapor, temperature of bulk liquid, and volatile organic compound (VOC), hazardous air pollutants (HAP), and hydrogen sulfide (H_2S) mass percentage were determined with BR&E ProMax. Condensate loading is vapor balanced with the condensate tanks with a 95% capture efficiency. (LOAD-1 & LOAD-2)

Fugitives
The emissions from fugitive components associated with this project are calculated using emission factors from Table 2-4 of the EPA Protocol for Equipment Leak Emission estimates, November 1995. Site specific analyses for inlet gas, residue gas, and condensate were used.

Haul Road Emissions
Unpaved haul road emissions were calculated using constants from AP-42 Table 13.2.2-2 and the methodology outlined in AP-42 Chapter 13.2.2.

Miscellaneous MSS
Miscellaneous MSS emissions include routine pigging activities, routine replacement of glycol solution used in dehydration units, routine replacement of solution used in amine units, use of aerosol lubricants, piping components, and calibration activities. Routine pigging emissions are controlled by a flare (FL-1800-CHP)

MSS Blowdowns
MSS Blowdown emissions include venting emissions from blowdowns, starter vents, and any gas operated controllers present at the facility, if any.

TARGA

Targa Midstream Services, LLC, Copperhead Gas Plant

Emissions Summary

Uncontrolled Steady-State Emissions

Unit	Description	NO_x		CO		VOC		SO_2		TSP		PM_{10}		$PM_{2.5}$		Total HAPs		H2S	
		lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tpy	lb/hr	tpy
	Compressor Station Equipment																		
FUG	Facility fugitives	-	-	-	-	-	12.52	-	-	-	-	-	-	-	-	-	0.66	4.84E-05	2.12E-04
DEHY1	Glycol Dehydrator	-	-	-	-	-	447.0	-	-	-	-	-	-	-	-	-	199.54	-	-
DEHY2	Glycol Dehydrator	-	-	-	-	-	447.0	-	-	-	-	-	-	-	-	-	199.54	-	-
H-1	Dehydrator Reboiler	0.29	1.29	0.25	1.08	0.0162	0.071	0.020	0.09	0.022	0.098	0.022	0.098	0.022	0.098	0.000	0.001	-	-
H-2	Dehydrator Reboiler	0.29	1.29	0.25	1.08	0.0162	0.071	0.020	0.09	0.022	0.098	0.022	0.098	0.022	0.098	0.000	0.001	-	-
FLARE	Flare	0.090	0.39	0.18	0.79	-	-	0.006	0.026	-	-	-	-	-	-	-	-	6.20E-05	0.0003
Tank-1	Condensate Tank	-	-	-	-	1.88	8.22	-	-	-	-	-	-	-	-	-	0.23	1.34E-03	0.01
Tank-2	Condensate Tank	-	-	-	-	1.88	8.22	-	-	-	-	-	-	-	-	-	0.23	1.34E-03	0.01
Tank-3	Produced Water Tank	-	-	-	-	0.01	0.05	-	-	-	-	-	-	-	-	-	0.02	7.07E-04	0.0031
Tank-4	Produced Water Tank	-	-	-	-	0.01	0.05	-	-	-	-	-	-	-	-	-	0.02	-	-
LOAD-1	Load-out of Condensate	-	-	-	-	2.51	0.14	-	-	-	-	-	-	-	-	-	0.01	-	-
LOAD-2	Load-out of Produced Water	-	-	-	-	0.003	7.68E-04	-	-	-	-	-	-	-	-	-	0.0000	-	-
HAUL	Haul Roads	;-	;-	;-	;-	;-	;-	;-	;-	0.35	0.03	0.35	0.03	0.35	0.03	-	-	-	-
SSM-CS	Electric Compressors Blowdowns	-	-	-	-	-	3.5862	-	-	-	-	-	-	-	-	-	0.060	2.24E-03	0.0098
	Pigging and purging pipeline	-	-	-	-	21.7	10.14	-	-	-	-	-	-	-	-	-	0.014	7.05E-04	0.0031
	Pipeline Maintenance	-	-	-	-	-	0.0010	-	-	-	-	-	-	-	-	-	1.59E-05	5.93E-07	2.6E-06
	Vessel Blowdown	-	-	-	-	-	0.32	-	-	-	-	-	-	-	-	-	0.005	2.02E-04	0.0009
	Gas Processing Plant Equipment																		
A-CHP	Amine Treater Plant 1	--	--	--	--	23.31	102.10	--	--	--	--	--	--	--	--	7.58	33.21	9,258.34	40,551.52
A-CH2	Amine Treater Plant 2	--	--	--	--	23.31	102.10	--	--	--	--	--	--	--	--	7.58	33.21	9,258.34	40,551.52
DEHY-CHP	TEG Dehydrator Plant 1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DEHY-CH2	TEG Dehydrator Plant 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
H-1701-CHP	HMO Heater 1701	2.67	11.68	2.70	11.84	0.39	1.73	0.05	0.21	0.54	2.38	0.54	2.38	0.54	2.38	0.01	0.03	-	-
H-1702-CHP	HMO Heater 1702	2.67	11.68	2.70	11.84	0.39	1.73	0.05	0.21	0.54	2.38	0.54	2.38	0.54	2.38	0.01	0.03	-	-
H-1703-CHP	HMO Heater 1703	2.67	11.68	2.70	11.84	0.39	1.73	0.05	0.21	0.54	2.38	0.54	2.38	0.54	2.38	0.01	0.03	-	-
H-1704-CHP	HMO Heater 1704	1.30	5.68	1.31	5.75	0.19	0.84	0.02	0.10	0.26	1.16	0.26	1.16	0.26	1.16	0.00	0.01	-	-
H-4701-CHP	Regen Gas Heater 4701	0.48	2.08	0.48	2.11	0.07	0.31	0.01	0.04	0.10	0.42	0.10	0.42	0.10	0.42	0.00	0.00	-	-
H-1701-CH2	HMO Heater 1701	2.67	11.68	2.70	11.84	0.39	1.73	0.05	0.21	0.54	2.38	0.54	2.38	0.54	2.38	0.01	0.03	-	-
H-1702-CH2	HMO Heater 1702	2.67	11.68	2.70	11.84	0.39	1.73	0.05	0.21	0.54	2.38	0.54	2.38	0.54	2.38	0.01	0.03	-	-
H-1703-CH2	HMO Heater 1703	2.67	11.68	2.70	11.84	0.39	1.73	0.05	0.21	0.54	2.38	0.54	2.38	0.54	2.38	0.01	0.03	-	-
H-1704-CH2	HMO Heater 1704	1.30	5.68	1.31	5.75	0.19	0.84	0.02	0.10	0.26	1.16	0.26	1.16	0.26	1.16	0.00	0.01	-	-
H-4701-CH2	Regen Gas Heater 4701	0.48	2.08	0.48	2.11	0.07	0.31	0.01	0.04	0.10	0.42	0.10	0.42	0.10	0.42	0.00	0.00	-	-
FL-1800-CHP	Flare 1: Steady State	0.21	0.92	0.42	1.83	0.00	0.00	1.32E-04	5.77E-04	-	-	-	-	-	-	0.00E+00	0.00E+00	1.40E-06	6.14E-06
FL-1800-CH2	Flare 2: Steady State	0.21	0.92	0.42	1.83	0.00	0.00	1.32E-04	5.77E-04	-	-	-	-	-	-	0.00E+00	0.00E+00	1.40E-06	6.14E-06
FUG-CHP	Plant 1 Fugitives	-	-	-	-	8.79	38.52	-	-	-	-	-	-	-	-	0.55	2.41	0.19	0.84
FUG-CH2	Plant 2 Fugitives	-	-	-	-	8.79	38.52	-	-	-	-	-	-	-	-	0.55	2.41	0.19	0.84
FL-1800-CHP	Flare: Startup, Shutdown, Maintenance, Malfunction	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FL-1800-CH2	Flare: Startup, Shutdown, Maintenance, Malfunction	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TK-1907-CHP	Produced Water Tank	-	-	-	-	12.25	53.65	-	-	-	-	-	-	-	-	-	44.67	-	15.38
TK-1908-CHP	Produced Water Tank	-	-	-	-	0.00	0.00	-	-	-	-	-	-	-	-	-	0.00	-	0.00
TK-1907-CH2	Produced Water Tank	-	-	-	-	0.00	0.00	-	-	-	-	-	-	-	-	-	0.00	-	0.00
TK-1908-CH2	Produced Water Tank	-	-	-	-	0.00	0.00	-	-	-	-	-	-	-	-	-	0.00	-	0.00
L-P	Pressurized Loading	-	-	-	-	0.54	0.05	-	-	-	-	-	-	-	-	-	-	-	-
VCU	Vapor Combustion Unit	0.007	0.030	0.01	0.06	0.000	0.000	1.72E-05	7.53E-05	-	-	-	-	-	-	0.00E+00	0.00E+00	1.83E-07	8.01E-07
SSM-Plant	Startup, Shutdown, Maintenance	0.00	0.00	0.00	0.00	1126.99	13.44	0.00	0.00	47.79	0.14	6.79	0.02	0.68	0.00	20.01	0.38	0.05	0.00
	Totals	0.68	2.97	0.67	2.95	27.9800	937.5	0.05	0.20	0.397	0.225	0.40	0.225	0.40	0.225	0.000	400.33	0.007	0.03

TARGA

Targa Midstream Services, LLC, Copperhead Gas Plant

Emissions Summary

Requested Steady State Emissions

Unit	Description	NO_x		CO		VOC		SO_2		TSP		PM_{10}		$PM_{2.5}$		Total HAPs		H2S	
		lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tpy	lb/hr	tpy
	Compressor Station Equipment																		
FUG	Facility fugitives	-	-	-	-	2.86	12.52	-	-	-	-	-	-	-	-	0.15	0.66	4.84E-05	2.12E-04
DEHY1	Glycol Dehydrator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DEHY2	Glycol Dehydrator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
H-1	Dehydrator Reboiler	0.29	1.29	0.25	1.08	0.02	0.07	0.02	0.09	0.022	0.098	0.022	0.098	0.022	0.098	0.0002	0.001	-	-
H-2	Dehydrator Reboiler	0.29	1.29	0.25	1.08	0.02	0.07	0.02	0.09	0.022	0.098	0.022	0.098	0.022	0.098	0.0002	0.001	-	--
FLARE	Flare - Dehydrator/Tank Control	1.47	6.43	2.93	12.84	3.10	13.56	8.85	38.76	-	-	-	-	-	-	0.48	2.12	0.096	0.42
FLARE	Startup, Shutdown, Maintenance, Malfunction	7.08	0.04	14.14	0.09	12.60	0.072	0.03	1.82E-04	-	-	-	-	-	-	-	-	4.50E-07	1.97E-06
Tank-1	Condensate Tank	-	-	-	-	0.04	0.16	-	-	-	-	-	-	-	-	-	-	-	-
Tank-2	Condensate Tank	-	-	-	-	0.04	0.16	-	-	-	-	-	-	-	-	-	-	-	-
Tank-3	Produced Water Tank	-	-	-	-	0.01	0.05	-	-	-	-	-	-	-	-	-	0.016	7.07E-04	0.0031
Tank-4	Produced Water Tank	-	-	-	-	0.01	0.05	-	-	-	-	-	-	-	-	-	--	--	--
LOAD-1	Load-out of Condensate	-	-	-	-	2.51	0.14	-	-	-	-	-	-	-	-	-	0.01	-	-
LOAD-2	Load-out of Produced Water	-	-	-	-	0.003	0.002	-	-	-	-	-	-	-	-	-	0.000	-	-
HAUL	Haul Roads	-	-	-	-	-	-	-	-	0.35	0.03	0.35	0.030	0.04	0.003	-	-	-	-
SSM-CS	Pipeline Maintenance	-	-	-	-	-	0.001	-	-	-	-	-	-	-	-	-	1.59E-05	5.93E-07	2.60E-06
	Gas Processing Plant Equipment																		
A-CHP	Amine Treater Plant 1[1]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
A-CH2	Amine Treater Plant 2[1]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DEHY-CHP	TEG Dehydrator Plant 1[2]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DEHY-CH2	TEG Dehydrator Plant 2[2]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
H-1701-CHP	HMO Heater 1701	2.67	11.68	2.70	11.84	0.39	1.73	0.05	0.21	0.54	2.38	0.54	2.38	0.54	2.38	0.01	0.03	-	-
H-1702-CHP	HMO Heater 1702	2.67	11.68	2.70	11.84	0.39	1.73	0.05	0.21	0.54	2.38	0.54	2.38	0.54	2.38	0.01	0.03	-	-
H-1703-CHP	HMO Heater 1703	2.67	11.68	2.70	11.84	0.39	1.73	0.05	0.21	0.54	2.38	0.54	2.38	0.54	2.38	0.01	0.03	-	-
H-1704-CHP	HMO Heater 1704	1.30	5.68	1.31	5.75	0.19	0.84	0.02	0.10	0.26	1.16	0.26	1.16	0.26	1.16	0.003	0.01	-	-
H-4701-CHP	Regen Gas Heater 4701	0.48	2.08	0.48	2.11	0.07	0.31	0.01	0.04	0.10	0.42	0.10	0.42	0.10	0.42	0.001	0.00	-	-
H-1701-CH2	HMO Heater 1701	2.67	11.68	2.70	11.84	0.39	1.73	0.05	0.21	0.54	2.38	0.54	2.38	0.54	2.38	0.01	0.03	-	-
H-1702-CH2	HMO Heater 1702	2.67	11.68	2.70	11.84	0.39	1.73	0.05	0.21	0.54	2.38	0.54	2.38	0.54	2.38	0.01	0.03	-	-
H-1703-CH2	HMO Heater 1703	2.67	11.68	2.70	11.84	0.39	1.73	0.05	0.21	0.54	2.38	0.54	2.38	0.54	2.38	0.01	0.03	-	-
H-1704-CH2	HMO Heater 1704	1.30	5.68	1.31	5.75	0.19	0.84	0.02	0.10	0.26	1.16	0.26	1.16	0.26	1.16	0.003	0.01	-	-
H-4701-CH2	Regen Gas Heater 4701	0.48	2.08	0.48	2.11	0.07	0.31	0.01	0.04	0.10	0.42	0.10	0.42	0.10	0.42	0.001	0.00	-	-
FL-1800-CHP	Flare 1: Steady State	0.21	0.92	0.42	1.83	0.00	0.00	1.32E-04	5.77E-04	-	-	-	-	-	-	0.00	0.00	1.40E-06	6.14E-06
FL-1800-CH2	Flare 2: Steady State	0.21	0.92	0.42	1.83	0.00	0.00	1.32E-04	5.77E-04	-	-	-	-	-	-	0.00	0.00	1.40E-06	6.14E-06
FUG-CHP	Plant 1 Fugitives	-	-	-	-	8.79	38.52	-	-	-	-	-	-	-	-	0.55	2.41	0.19	0.84
FUG-CH2	Plant 2 Fugitives	-	-	-	-	8.79	38.52	-	-	-	-	-	-	-	-	0.55	2.41	0.19	0.84
FL-1800-CHP	Flare: Startup, Shutdown, Maintenance, Malfunction	1,790.77	46.72	3,575.05	93.28	2.87	0.64	1,257.60	37.87	-	-	-	-	-	-	-	-	13.63	0.41
FL-1800-CH2	Flare: Startup, Shutdown, Maintenance, Malfunction	1,790.77		3,575.05		2.87		1,257.60		-	-	-	-	-	-	-	-	13.63	
TK-1907-CHP	Produced Water Tank	-	-	-	-			-	-	-	-	-	-	-	-	-		-	
TK-1908-CHP	Produced Water Tank	-	-	-	-	0.24	1.07	-	-	-	-	-	-	-	-	-	0.89	-	0.308
TK-1907-CH2	Produced Water Tank	-	-	-	-			-	-	-	-	-	-	-	-	-		-	
TK-1908-CH2	Produced Water Tank	-	-	-	-			-	-	-	-	-	-	-	-	-		-	
L-P	Pressurized Loading	-	-	-	-	0.54	0.05	-	-	-	-	-	-	-	-	-	-	-	-
VCU	Vapor Combustion Unit	0.06	0.27	0.12	0.54	0.32	1.40	2.59	11.33	-	-	-	-	-	-	0.29	1.28	0.03	0.12
SSM-Plant	Startup, Shutdown, Maintenance					1,126.99	13.44			47.79	0.14	6.79	0.02	0.68	0.002	20.01	0.38	0.05	0.0046
	Site-Wide Totals	**3,610.69**	**143.46**	**7,188.42**	**199.33**	**1,175.51**	**133.14**	**2,527.05**	**89.69**	**52.17**	**17.84**	**11.17**	**17.71**	**4.75**	**17.67**	**22.08**	**10.36**	**27.83**	**2.94**
	Site-Wide minus SSM Totals	**22.08**	**96.69**	**24.19**	**105.96**	**30.10**	**118.66**	**11.83**	**51.82**	**4.39**	**17.69**	**4.39**	**17.69**	**4.07**	**17.67**	**2.07**	**9.98**	**0.51**	**2.52**
	SSM Totals	**3,588.62**	**46.77**	**7,164.23**	**93.37**	**1,145.33**	**14.15**	**2,515.22**	**37.87**	**47.79**	**0.14**	**6.79**	**0.02**	**0.68**	**0.00**	**20.01**	**0.38**	**27.32**	**0.42**

1. Amine units are routed to either the AGI or the flares they have no direct emissions
2. Plant TEG glycol dehydration units are part of a closed system that route to the inlet.

TARGA

Targa Midstream Services, LLC, Copperhead Gas Plant

Inlet Gas Analysis - Compressor Station

Components	MW	Mol%	MW*Mol%	Weight%	Specific Volume ft3/lb	Calculated Specific Volume ft3/lb
H2S	34.00	1.00%	0.34	1.51%	11.14	
Nitrogen	28.01	1.83%	0.51	2.27%	13.55	
Methane	16.04	73.89%	11.85	52.68%	23.65	
Carbon Dioxide	44.01	2.36%	1.04	4.61%	8.62	
Ethane	30.07	11.57%	3.48	15.46%	12.62	
Propane	44.10	6.24%	2.75	12.24%	8.61	5.27
i-Butane	58.12	0.82%	0.48	2.13%	6.53	0.53
n-Butane	58.12	1.93%	1.12	4.99%	6.53	1.24
i-Pentane	72.15	0.42%	0.30	1.34%	5.26	0.22
n-Pentane	72.15	0.41%	0.29	1.30%	5.26	0.21
Neohexane	86.18	0.00%	0.00	0.01%	4.40	0.00
Cyclopentane	70.14	0.03%	0.02	0.10%	5.41	0.02
2-Methylpentane	86.18	0.06%	0.05	0.24%	4.40	0.03
3-Methylpentane	86.18	0.03%	0.03	0.13%	4.40	0.01
n-Hexane	86.18	0.07%	0.06	0.25%	4.40	0.03
Methylcyclopentane	84.16	0.03%	0.03	0.13%	4.51	0.02
Benzene	78.11	0.03%	0.02	0.09%	4.86	0.01
Cyclohexane	84.16	0.04%	0.04	0.16%	4.51	0.02
2-Methylhexane	100.21	0.01%	0.01	0.03%	3.79	0.00
3-Methylhexane	100.21	0.01%	0.01	0.04%	3.79	0.00
1,1-Dimethylcyclopentane	98.19	0.01%	0.01	0.06%		
Heptanes	100.21	0.01%	0.01	0.04%	3.79	0.00
Methylcyclohexane	98.19	0.02%	0.02	0.08%	3.87	0.01
1,1,2-Trimethylcyclopentane	112.21	0.00%	0.00	0.00%		
Toluene	92.14	0.01%	0.01	0.05%	4.12	0.00
2-Methylheptane	114.23	0.00%	0.00	0.02%	3.32	0.00
3-Methylheptane	114.23	0.00%	0.00	0.00%	3.32	0.00
1,1-Dimethylcyclohexane	112.21	0.00%	0.00	0.01%		
Octanes	114.23	0.00%	0.00	0.01%	3.32	0.00
Ethylbenzene	106.17	0.00%	0.00	0.00%	3.57	0.00
m-Xylene	106.17	0.00%	0.00	0.00%		
p-Xylene	106.17	0.00%	0.00	0.00%	3.57	0.00
o-Xylene	106.17	0.00%	0.00	0.00%	3.57	0.00
Nonanes	128.20	0.00%	0.00	0.01%	2.96	0.00
Decanes	142.29	0.00%	0.00	0.00%	2.67	0.00
Undecane	142.29	0.00%	0.00	0.00%	2.67	0.00
Total		101%	22.50	100.00		
Total VOC		10.2%		23.46%		7.61
Total HAPs		0.10%		0.39%		0.045

Inlet Gas Analysis-Gas Plant

Components	MW	Mol%	MW*Mol%	Weight%	Specific Volume ft3/lb	Calculated Specific Volume ft3/lb
H2S	34.00	0.75%	0.26	1.07%	11.14	
Nitrogen	28.01	2.17%	0.61	2.56%	13.55	
Methane	16.04	68.36%	10.97	46.15%	23.65	
Carbon Dioxide	44.01	4.99%	2.20	9.25%	8.62	
Ethane	30.07	12.44%	3.74	15.74%	12.62	
Propane	44.10	6.75%	2.98	12.53%	8.61	5.16
i-Butane	58.12	0.85%	0.49	2.08%	6.53	0.49
n-Butane	58.12	2.08%	1.21	5.09%	6.53	1.21
i-Pentane	72.15	0.48%	0.35	1.45%	5.26	0.22
n-Pentane	72.15	0.52%	0.38	1.59%	5.26	0.24
Neohexane	86.18	0.00%	0.00	0.00%	4.40	0.00
Cyclopentane	70.14	0.00%	0.00	0.00%	5.41	0.00
2-Methylpentane	86.18	0.00%	0.00	0.00%	4.40	0.00
3-Methylpentane	86.18	0.00%	0.00	0.00%	4.40	0.00
n-Hexane	86.18	0.30%	0.26	1.10%	4.40	0.12
Methylcyclopentane	84.16	0.00%	0.00	0.00%	4.51	0.00
Benzene	78.11	0.01%	0.01	0.03%	4.86	0.00
Cyclohexane	84.16	0.00%	0.00	0.00%	4.51	0.00
2-Methylhexane	100.21	0.00%	0.00	0.00%	3.79	0.00
3-Methylhexane	100.21	0.00%	0.00	0.00%	3.79	0.00
1,1-Dimethylcyclopentane	98.19	0.00%	0.00	0.00%		
Heptanes	100.21	0.00%	0.00	0.00%	3.79	0.00
Methylcyclohexane	98.19	0.00%	0.00	0.00%	3.87	0.00
1,1,2-Trimethylcyclopentane	112.21	0.00%	0.00	0.00%		
Toluene	92.14	0.00%	0.00	0.00%	4.12	0.00
2-Methylheptane	114.23	0.00%	0.00	0.00%	3.32	0.00
3-Methylheptane	114.23	0.00%	0.00	0.00%	3.32	0.00
1,1-Dimethylcyclohexane	112.21	0.00%	0.00	0.00%		
Octanes	114.23	0.09%	0.10	0.43%	3.32	0.03
Ethylbenzene	106.17	0.00%	0.00	0.00%	3.57	0.00
m-Xylene	106.17	0.00%	0.00	0.00%		
p-Xylene	106.17	0.00%	0.00	0.00%	3.57	0.00
o-Xylene	106.17	0.00%	0.00	0.00%	3.57	0.00
Nonanes	128.20	0.17%	0.22	0.93%	2.96	0.05
Decanes	142.29	0.00%	0.00	0.00%	2.67	0.00
Undecane	142.29	0.00%	0.00	0.00%	2.67	0.00
Total		100%	23.76	100.00		
Total VOC		11.3%		25.23%		7.52
Total HAPs		0.31%		1.13%		0.122

Targa Midstream Services, LLC, Copperhead Gas Plant
Fugitive Emissions Summary

ID FUG

COMPONENT	COUNT [1]	EPA FACTOR [2] (lb/hr-src)	REDUCTION ALLOWED FOR LDAR	VOC CONTENT IN STREAM	TOTAL VOC EMISSIONS (lb/hr)	TOTAL VOC EMISSIONS (tpy)	H_2S CONTENT IN STREAM[4]	TOTAL H2S EMISSIONS (lb/hr)	TOTAL H_2S EMISSIONS (tpy)	HAP CONTENT IN STREAM[4]	TOTAL HAP EMISSIONS (lb/hr)	TOTAL HAP EMISSIONS (tpy)	n-Hexane (lb/hr)	Benzene (lb/hr)	Toluene (lb/hr)	n-Hexane (tpy)	Benzene (tpy)	Toluene (tpy)
INLET GAS (gas)																		
VALVES	360	0.00992		23.80%	8.50E-01	3.72E+00	0.001%	2.32E-05	1.01E-04	0.40%	1.42E-02	6.22E-02	9.12E-03	3.17E-03	1.65E-03	3.99E-02	1.39E-02	7.24E-03
FLANGES	720	0.00086		23.80%	1.47E-01	6.45E-01	0.001%	4.01E-06	1.76E-05	0.40%	2.46E-03	1.08E-02	1.58E-03	5.50E-04	2.87E-04	6.92E-03	2.41E-03	1.26E-03
CONNECTORS	360	0.00044		23.80%	3.77E-02	1.65E-01	0.001%	1.03E-06	4.50E-06	0.40%	6.30E-04	2.76E-03	4.04E-04	1.41E-04	7.33E-05	1.77E-03	6.16E-04	3.21E-04
PRVs	16	0.01940		23.80%	7.39E-02	3.24E-01	0.001%	2.01E-06	8.81E-06	0.40%	1.23E-03	5.40E-03	7.93E-04	2.76E-04	1.44E-04	3.47E-03	1.21E-03	6.29E-04
OTHER[3]	8	0.01940		23.80%	3.69E-02	1.62E-01	0.001%	1.01E-06	4.41E-06	0.40%	6.17E-04	2.70E-03	3.96E-04	1.38E-04	7.19E-05	1.74E-03	6.03E-04	3.15E-04
CONDENSATE (light oil)																		
VALVES	192	0.00550		100.00%	1.06E+00	4.63E+00	0.001%	1.06E-05	4.66E-05	7.70%	8.14E-02	3.56E-01	6.08E-02	2.08E-02	4.08E-02	2.66E-01	9.12E-02	1.79E-01
FLANGES	384	0.000243		100.00%	9.33E-02	4.09E-01	0.001%	9.39E-07	4.11E-06	7.70%	7.19E-03	3.15E-02	5.38E-03	1.84E-03	3.60E-03	2.35E-02	8.06E-03	1.58E-02
CONNECTORS	192	0.00046		100.00%	8.89E-02	3.89E-01	0.001%	8.95E-07	3.92E-06	7.70%	6.85E-03	3.00E-02	5.12E-03	1.75E-03	3.43E-03	2.24E-02	7.68E-03	1.50E-02
PUMP SEALS	5	0.02866		100.00%	1.43E-01	6.28E-01	0.001%	1.44E-06	6.32E-06	7.70%	1.10E-02	4.84E-02	8.25E-03	2.83E-03	5.53E-03	3.62E-02	1.24E-02	2.42E-02
PRVs	8	0.016535		100.00%	1.32E-01	5.79E-01	0.001%	1.33E-06	5.83E-06	7.70%	1.02E-02	4.46E-02	7.62E-03	2.61E-03	5.11E-03	3.34E-02	1.14E-02	2.24E-02
OTHER[3]	0	0.016535		100.00%	0.00E+00	0.00E+00	0.001%	0.00E+00	0.00E+00	7.70%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
WATER/OIL																		
VALVES	192	0.0002161		100.00%	4.15E-02	1.82E-01	0.0010%	4.18E-07	1.83E-06	7.70%	3.20E-03	1.40E-02	2.39E-03	8.18E-04	1.60E-03	1.05E-02	3.58E-03	7.02E-03
CONNECTORS	384	0.000243		100.00%	9.33E-02	4.09E-01	0.0010%	9.39E-07	4.11E-06	7.70%	7.19E-03	3.15E-02	5.38E-03	1.84E-03	3.60E-03	2.35E-02	8.06E-03	1.58E-02
FLANGES	192	0.0000064		100.00%	1.20E-03	5.40E-03	0.0010%	1.24E-08	5.41E-08	7.70%	9.45E-05	4.14E-04	7.07E-05	2.42E-05	4.74E-05	3.10E-04	1.06E-04	2.08E-04
PRVs	2	0.030864		100.00%	6.17E-02	2.70E-01	0.0010%	6.21E-07	2.72E-06	7.70%	4.76E-03	2.08E-02	3.56E-03	1.22E-03	2.38E-03	1.56E-02	5.33E-03	1.04E-02
TOTAL EMISSIONS					**2.86**	**12.52**		**4.84E-05**	**2.12E-04**		**0.15**	**0.66**	**0.11**	**0.034**	**0.06**	**0.44**	**0.15**	**0.27**

[1] Fugitive emission source counts were calculated based on information provided by the facility. Reduction credits are based on the TCEQ Air Permit Technical Guidance for Chemical Sources: Fugitive Guidance (06/2018), utilizing a 28VHP program.
[2] Factors are from TCEQ's "Air Permit Technical Guidance for Chemical Sources: Equipment Leak Fugitives," (October 2000). Emission factors pulled from Facility/Compound Specific Fugitive Emission Factors Table for Oil and Gas Production Operations.
[3] Includes compressors and sample points
[4] For conservative emission calculation purposes, the Total HAP and H_2S content of the water/oil stream was assumed to be equal to that of the condensate stream.

TARGA

Targa Midstream Services, LLC, Copperhead Gas Plant
Fugitive Emissions Summary

ID: FUG-CHP

COMPONENT	COUNT [1]	EPA FACTOR [2] (lb/hr-src)	REDUCTION ALLOWED FOR LDAR	VOC CONTENT IN STREAM	TOTAL VOC EMISSIONS (lb/hr)	TOTAL VOC EMISSIONS (tpy)	H_2S CONTENT IN STREAM[4]	TOTAL H2S EMISSIONS (lb/hr)	TOTAL H_2S EMISSIONS (tpy)	HAP CONTENT IN STREAM[4]	TOTAL HAP EMISSIONS (lb/hr)	TOTAL HAP EMISSIONS (tpy)	n-Hexane (lb/hr)	Benzene (lb/hr)	Toluene (lb/hr)	n-Hexane (tpy)	Benzene (tpy)	Toluene (tpy)
INLET GAS (gas)																		
VALVES	1040	0.00992		25.23%	2.60E+00	11.40	0.011%	1.11E-03	4.85E-03	1.13%	1.16E-01	0.5095	1.13E-01	3.28E-03	0.00E+00	4.95E-01	1.43E-02	0.00E+00
FLANGES	2080	0.00086		25.23%	4.51E-01	1.98	0.011%	1.92E-04	8.41E-04	1.13%	2.02E-02	0.0883	1.96E-02	5.68E-04	0.00E+00	8.59E-02	2.49E-03	0.00E+00
CONNECTORS	1040	0.00044		25.23%	1.15E-01	0.51	0.011%	4.91E-05	2.15E-04	1.13%	5.16E-03	0.0226	5.01E-03	1.45E-04	0.00E+00	2.20E-02	6.36E-04	0.00E+00
PRVs	5	0.01940		25.23%	2.45E-02	0.11	0.011%	1.04E-05	4.56E-05	1.13%	1.09E-03	0.0048	1.06E-03	3.08E-05	0.00E+00	4.66E-03	1.35E-04	0.00E+00
OTHER[3]	0	0.01940		25.23%	0.00E+00	0.00	0.011%	0.00E+00	0.00E+00	1.13%	0.00E+00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RESIDUE GAS (gas)																		
VALVES	541	0.00992		0.00%	0.00E+00	0.00E+00	0.00087%	4.68E-05	2.05E-04	0.000000%	0.00E+00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FLANGES	1082	0.00086		0.00%	0.00E+00	0.00E+00	0.00087%	8.11E-06	3.55E-05	0.000000%	0.00E+00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CONNECTORS	541	0.00044		0.00%	0.00E+00	0.00E+00	0.00087%	2.07E-06	9.08E-06	0.000000%	0.00E+00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PRVs	5	0.01940		0.00%	0.00E+00	0.00E+00	0.00087%	8.45E-07	3.70E-06	0.000000%	0.00E+00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
OTHER[3]	0	0.01940		0.00%	0.00E+00	0.00E+00	0.00087%	0.00E+00	0.00E+00	0.000000%	0.00E+00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PROPANE REFRIGERATION GAS (gas)																		
VALVES	214	0.00992		99.30%	2.11E+00	9.23	0.000%	0.00E+00	0.00E+00	0.00%	0.00E+00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FLANGES	428	0.00086		99.30%	3.66E-01	1.60	0.000%	0.00E+00	0.00E+00	0.00%	0.00E+00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CONNECTORS	214	0.00044		99.30%	9.35E-02	0.41	0.000%	0.00E+00	0.00E+00	0.00%	0.00E+00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PRVs	1	0.01940		99.30%	1.93E-02	0.08	0.000%	0.00E+00	0.00E+00	0.00%	0.00E+00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
OTHER[3]	3	0.01940		99.30%	5.78E-02	0.25	0.000%	0.00E+00	0.00E+00	0.00%	0.00E+00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ACID GAS (gas)																		
VALVES	100	0.00992		0.03%	2.00E-04	0.00	10.005%	9.93E-02	4.35E-01	0.01%	8.21E-05	0.0004	8.60E-07	8.13E-05	0.00E+00	3.77E-06	3.56E-04	0.00E+00
FLANGES	200	0.00086		0.03%	0.00E+00	0.00	10.005%	1.72E-02	7.54E-02	0.01%	1.42E-05	0.0001	1.49E-07	1.41E-05	0.00E+00	6.53E-07	6.17E-05	0.00E+00
CONNECTORS	100	0.00044		0.03%	0.00E+00	0.00	10.005%	4.40E-03	1.93E-02	0.01%	3.64E-06	0.0000	3.82E-08	3.60E-06	0.00E+00	1.67E-07	1.58E-05	0.00E+00
PRVs	2	0.01940		0.03%	0.00E+00	0.00	10.005%	3.88E-03	1.70E-02	0.01%	3.21E-06	0.0000	3.37E-08	3.18E-06	0.00E+00	1.47E-07	1.39E-05	0.00E+00
OTHER[3]	2	0.01940		0.03%	0.00E+00	0.00	10.005%	3.88E-03	1.70E-02	0.01%	3.21E-06	0.0000	3.37E-08	3.18E-06	0.00E+00	1.47E-07	1.39E-05	0.00E+00
FLARE PRODUCT GAS (gas)																		
VALVES	50	0.00992		0.03%	1.00E-04	0.00	10.005%	0.050	2.17E-01	0.01%	4.11E-05	0.0002	4.30E-07	4.06E-05	0.00E+00	1.88E-06	1.78E-04	0.00E+00
FLANGES	100	0.00086		0.03%	0.00E+00	0.00	10.005%	0.009	3.77E-02	0.01%	7.12E-06	0.0000	7.46E-08	7.05E-06	0.00E+00	3.27E-07	3.09E-05	0.00E+00
CONNECTORS	50	0.00044		0.03%	0.00E+00	0.00	10.005%	0.002	9.64E-03	0.01%	1.82E-06	0.0000	1.91E-08	1.80E-06	0.00E+00	8.36E-08	7.89E-06	0.00E+00
PRVs		0.01940		0.03%	0.00E+00	0.00	10.005%	0.000	0.00E+00	0.01%	0.00E+00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
OTHER[3]		0.01940		0.03%	0.00E+00	0.00	10.005%	0.000	0.00E+00	0.01%	0.00E+00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CONDENSATE (light oil)																		
VALVES	400	0.00550		99.66%	2.19E+00	9.60	0.0010%	2.21E-05	9.70E-05	7.70%	1.69E-01	0.7423	1.27E-01	4.34E-02	8.50E-02	5.55E-01	1.90E-01	3.72E-01
FLANGES	800	0.000243		99.66%	1.94E-01	0.85	0.0010%	1.96E-06	8.57E-06	7.70%	1.50E-02	0.0656	1.12E-02	3.83E-03	7.51E-03	4.90E-02	1.68E-02	3.29E-02
CONNECTORS	400	0.00046		99.66%	1.85E-01	0.81	0.0010%	1.86E-06	8.17E-06	7.70%	1.43E-02	0.0625	1.07E-02	3.65E-03	7.15E-03	4.67E-02	1.60E-02	3.13E-02
PUMP SEALS	7	0.02866		99.66%	2.00E-01	0.88	0.0010%	2.02E-06	8.85E-06	7.70%	1.55E-02	0.0677	1.16E-02	3.96E-03	7.75E-03	5.06E-02	1.73E-02	3.39E-02
PRVs	0	0.016535		99.66%	0.00E+00	0.00	0.0010%	0.00E+00	0.00E+00	7.70%	0.00E+00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
OTHER[3]	0	0.016535		99.66%	0.00E+00	0.00	0.0010%	0.00E+00	0.00E+00	7.70%	0.00E+00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

ID: FUG-CHP

COMPONENT	COUNT [1]	EPA FACTOR [2] (lb/hr-src)	REDUCTION ALLOWED FOR LDAR	VOC CONTENT IN STREAM	TOTAL VOC EMISSIONS (lb/hr)	TOTAL VOC EMISSIONS (tpy)	H_2S CONTENT IN STREAM[4]	TOTAL H2S EMISSIONS (lb/hr)	TOTAL H_2S EMISSIONS (tpy)	HAP CONTENT IN STREAM[4]	TOTAL HAP EMISSIONS (lb/hr)	TOTAL HAP EMISSIONS (tpy)	n-Hexane (lb/hr)	Benzene (lb/hr)	Toluene (lb/hr)	n-Hexane (tpy)	Benzene (tpy)	Toluene (tpy)
METHANOL																		
VALVES	25	0.0002161		100.00%	5.40E-03	0.02	0.0000%	0.00E+00	0.00E+00	100.00%	5.40E-03	0.0237	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FLANGES	50	0.0000064		100.00%	3.00E-04	0.00	0.0000%	0.00E+00	0.00E+00	100.00%	3.20E-04	0.0014	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CONNECTORS	25	0.000243		100.00%	6.10E-03	0.03	0.0000%	0.00E+00	0.00E+00	100.00%	6.08E-03	0.0266	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PUMP SEALS	6	0.02866		100.00%	1.72E-01	0.75	0.0000%	0.00E+00	0.00E+00	100.00%	1.72E-01	0.7532	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PRVs	0	0.030864		100.00%	0.00E+00	0.00	0.0000%	0.00E+00	0.00E+00	100.00%	0.00E+00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
WATER/OIL																		
VALVES	107	0.0002161		1.00%	2.00E-04	1.00E-03	0.0010%	2.33E-07	1.02E-06	7.70%	1.78E-03	0.0078	1.33E-03	4.56E-04	8.93E-04	5.83E-03	2.00E-03	3.91E-03
FLANGES	214	0.0000064		1.00%	0.00E+00	1.00E-04	0.0010%	1.38E-08	6.03E-08	7.70%	1.05E-04	0.0005	7.88E-05	2.70E-05	5.28E-05	3.45E-04	1.18E-04	2.31E-04
CONNECTORS	107	0.000243		1.00%	3.00E-04	1.10E-03	0.0010%	2.62E-07	1.15E-06	7.70%	2.00E-03	0.0088	1.50E-03	5.13E-04	1.00E-03	6.56E-03	2.25E-03	4.40E-03
PRVs	2	0.030864		1.00%	6.00E-04	2.70E-03	0.0010%	6.21E-07	2.72E-06	7.70%	4.76E-03	0.0208	3.56E-03	1.22E-03	2.38E-03	1.56E-02	5.33E-03	1.04E-02
LIQUID PRODUCT																		
VALVES	330	0.0002161		0.00%	0.00E+00	0.00	0.0000%	0.00E+00	0.00E+00	0.00%	0.00E+00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FLANGES	192	0.0000064		0.00%	0.00E+00	0.00	0.0000%	0.00E+00	0.00E+00	0.00%	0.00E+00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CONNECTORS	642	0.000243		0.00%	0.00E+00	0.00	0.0000%	0.00E+00	0.00E+00	0.00%	0.00E+00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PUMP SEALS	6	0.02866		0.00%	0.00E+00	0.00	0.0000%	0.00E+00	0.00E+00	0.00%	0.00E+00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PRVs	7	0.030864		0.00%	0.00E+00	0.00	0.0000%	0.00E+00	0.00E+00	0.00%	0.00E+00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
AMINE PRODUCT																		
VALVES	229	0.0002161		1.00%	5.00E-04	0.00	0.0517%	2.56E-05	1.12E-04	0.00%	0.00E+00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FLANGES	458	0.0000064		1.00%	0.00E+00	0.00	0.0517%	1.51E-06	6.63E-06	0.00%	0.00E+00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CONNECTORS	229	0.000243		1.00%	6.00E-04	0.00	0.0517%	2.88E-05	1.26E-04	0.00%	0.00E+00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PUMP SEALS	4	0.02866		1.00%	1.10E-03	0.01	0.0517%	5.93E-05	2.60E-04	0.00%	0.00E+00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PRVs	11	0.030864		1.00%	3.40E-03	0.01	0.0517%	1.76E-04	7.69E-04	0.00%	0.00E+00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GYCOL PRODUCT																		
VALVES	191	0.0000948		1.00%	2.00E-04	0.00	0.0000%	0.00E+00	0.00E+00	0.01%	1.54E-06	0.0000	6.38E-09	5.06E-07	7.31E-07	2.80E-08	2.22E-06	3.20E-06
FLANGES	382	0.0000009		1.00%	0.00E+00	0.00	0.0000%	0.00E+00	0.00E+00	0.01%	2.80E-08	0.0000	1.16E-10	9.18E-09	1.33E-08	5.07E-10	4.02E-08	5.81E-08
CONNECTORS	191	0.0000009		1.00%	0.00E+00	0.00	0.0000%	0.00E+00	0.00E+00	0.01%	1.40E-08	0.0000	5.79E-11	4.59E-09	6.63E-09	2.54E-10	2.01E-08	2.90E-08
PUMP SEALS	4	0.00113		1.00%	0.00E+00	0.00	0.0000%	0.00E+00	0.00E+00	0.01%	3.85E-07	0.0000	1.59E-09	1.26E-07	1.82E-07	6.98E-09	5.53E-07	7.99E-07
PRVs	0	0.000068		1.00%	0.00E+00	0.00	0.0000%	0.00E+00	0.00E+00	0.01%	0.00E+00	0.0000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL EMISSIONS					**8.79**	**38.52**		**0.19**	**0.84**		**0.55**	**2.41**	**0.31**	**0.06**	**0.11**	**1.31**	**0.26**	**0.47**

[1] Fugitive emission source counts were calculated based on information provided by the facility. Reduction credits are based on the TCEQ Air Permit Technical Guidance for Chemical Sources: Fugitive Guidance (06/2018), utilizing a 28VHP program.

[2] Factors are from TCEQ's "Air Permit Technical Guidance for Chemical Sources: Equipment Leak Fugitives," (October 2000). Emission factors pulled from Facility/Compound Specific Fugitive Emission Factors Table for Oil and Gas Production Operations.

[3] Includes compressors and sample points

[4] For conservative emission calculation purposes, the Total HAP and H_2S content of the water/oil stream was assumed to be equal to that of the condensate stream.

TARGA

Targa Midstream Services, LLC, Copperhead Gas Plant
Fugitive Emissions Summary

ID: FUG-CH2

COMPONENT	COUNT [1]	EPA FACTOR [2] (lb/hr-src)	REDUCTION ALLOWED FOR LDAR	VOC CONTENT IN STREAM	TOTAL VOC EMISSIONS (lb/hr)	TOTAL VOC EMISSIONS (tpy)	H_2S CONTENT IN STREAM[4]	TOTAL H2S EMISSIONS (lb/hr)	TOTAL H_2S EMISSIONS (tpy)	HAP CONTENT IN STREAM[4]	TOTAL HAP EMISSIONS (lb/hr)	TOTAL HAP EMISSIONS (tpy)	n-Hexane (lb/hr)	Benzene (lb/hr)	Toluene (lb/hr)	n-Hexane (tpy)	Benzene (tpy)	Toluene (tpy)
INLET GAS (gas)																		
VALVES	1040	0.00992		25.23%	2.60E+00	1.14E+01	0.011%	1.11E-03	4.85E-03	1.13%	1.16E-01	5.09E-01	1.13E-01	3.28E-03	0.00E+00	4.95E-01	1.43E-02	0.00E+00
FLANGES	2080	0.00086		25.23%	4.51E-01	1.98E+00	0.011%	1.92E-04	8.41E-04	1.13%	2.02E-02	8.83E-02	1.96E-02	5.68E-04	0.00E+00	8.59E-02	2.49E-03	0.00E+00
CONNECTORS	1040	0.00044		25.23%	1.15E-01	5.06E-01	0.011%	4.91E-05	2.15E-04	1.13%	5.16E-03	2.26E-02	5.01E-03	1.45E-04	0.00E+00	2.20E-02	6.36E-04	0.00E+00
PRVs	5	0.01940		25.23%	2.45E-02	1.07E-01	0.011%	1.04E-05	4.56E-05	1.13%	1.09E-03	4.79E-03	1.06E-03	3.08E-05	0.00E+00	4.66E-03	1.35E-04	0.00E+00
OTHER[3]	0	0.01940		25.23%	0.00E+00	0.00E+00	0.011%	0.00E+00	0.00E+00	1.13%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RESIDUE GAS (gas)																		
VALVES	541	0.00992		0.00%	0.00E+00	0.00E+00	0.00087%	4.68E-05	2.05E-04	0.000000%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FLANGES	1082	0.00086		0.00%	0.00E+00	0.00E+00	0.00087%	8.11E-06	3.55E-05	0.000000%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CONNECTORS	541	0.00044		0.00%	0.00E+00	0.00E+00	0.00087%	2.07E-06	9.08E-06	0.000000%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PRVs	5	0.01940		0.00%	0.00E+00	0.00E+00	0.00087%	8.45E-07	3.70E-06	0.000000%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
OTHER[3]	0	0.01940		0.00%	0.00E+00	0.00E+00	0.00087%	0.00E+00	0.00E+00	0.000000%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PROPANE REFRIGERATION GAS (gas)																		
VALVES	214	0.00992		99.30%	2.11E+00	9.23E+00	0.000%	0.00E+00	0.00E+00	0.00%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FLANGES	428	0.00086		99.30%	3.66E-01	1.60E+00	0.000%	0.00E+00	0.00E+00	0.00%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CONNECTORS	214	0.00044		99.30%	9.35E-02	4.10E-01	0.000%	0.00E+00	0.00E+00	0.00%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PRVs	1	0.01940		99.30%	1.93E-02	8.44E-02	0.000%	0.00E+00	0.00E+00	0.00%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
OTHER[3]	3	0.01940		99.30%	5.78E-02	2.53E-01	0.000%	0.00E+00	0.00E+00	0.00%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ACID GAS (gas)																		
VALVES	100	0.00992		0.03%	2.00E-04	1.10E-03	10.005%	9.93E-02	4.35E-01	0.01%	8.21E-05	3.60E-04	8.60E-07	8.13E-05	0.00E+00	3.77E-06	3.56E-04	0.00E+00
FLANGES	200	0.00086		0.03%	0.00E+00	2.00E-04	10.005%	1.72E-02	7.54E-02	0.01%	1.42E-05	6.24E-05	1.49E-07	1.41E-05	0.00E+00	6.53E-07	6.17E-05	0.00E+00
CONNECTORS	100	0.00044		0.03%	0.00E+00	0.00E+00	10.005%	4.40E-03	1.93E-02	0.01%	3.64E-06	1.60E-05	3.82E-08	3.60E-06	0.00E+00	1.67E-07	1.58E-05	0.00E+00
PRVs	2	0.01940		0.03%	0.00E+00	0.00E+00	10.005%	3.88E-03	1.70E-02	0.01%	3.21E-06	1.41E-05	3.37E-08	3.18E-06	0.00E+00	1.47E-07	1.39E-05	0.00E+00
OTHER[3]	2	0.01940		0.03%	0.00E+00	0.00E+00	10.005%	3.88E-03	1.70E-02	0.01%	3.21E-06	1.41E-05	3.37E-08	3.18E-06	0.00E+00	1.47E-07	1.39E-05	0.00E+00
FLARE PRODUCT GAS (gas)																		
VALVES	50	0.00992		0.03%	1.00E-04	5.00E-04	10.005%	0.050	2.17E-01	0.01%	4.11E-05	1.80E-04	4.30E-07	4.06E-05	0.00E+00	1.88E-06	1.78E-04	0.00E+00
FLANGES	100	0.00086		0.03%	0.00E+00	1.00E-04	10.005%	0.009	3.77E-02	0.01%	7.12E-06	3.12E-05	7.46E-08	7.05E-06	0.00E+00	3.27E-07	3.09E-05	0.00E+00
PRVs		0.01940		0.03%	0.00E+00	0.00E+00	10.005%	0.000	0.00E+00	0.01%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
OTHER[3]		0.01940		0.03%	0.00E+00	0.00E+00	10.005%	0.000	0.00E+00	0.01%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CONDENSATE (light oil)																		
VALVES	400	0.00550		99.66%	2.19E+00	9.60E+00	0.0010%	2.21E-05	9.70E-05	7.70%	1.69E-01	7.42E-01	1.27E-01	4.34E-02	8.50E-02	5.55E-01	1.90E-01	3.72E-01
FLANGES	800	0.000243		99.66%	1.94E-01	8.49E-01	0.0010%	1.96E-06	8.57E-06	7.70%	1.50E-02	6.56E-02	1.12E-02	3.83E-03	7.51E-03	4.90E-02	1.68E-02	3.29E-02
PUMP SEALS	7	0.02866		99.66%	2.00E-01	8.76E-01	0.0010%	2.02E-06	8.85E-06	7.70%	1.55E-02	6.77E-02	1.16E-02	3.96E-03	7.75E-03	5.06E-02	1.73E-02	3.39E-02
PRVs	0	0.016535		99.66%	0.00E+00	0.00E+00	0.0010%	0.00E+00	0.00E+00	7.70%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
OTHER[3]	0	0.016535		99.66%	0.00E+00	0.00E+00	0.0010%	0.00E+00	0.00E+00	7.70%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

ID: FUG-CH2

COMPONENT	COUNT [1]	EPA FACTOR [2] (lb/hr-src)	REDUCTION ALLOWED FOR LDAR	VOC CONTENT IN STREAM	TOTAL VOC EMISSIONS (lb/hr)	TOTAL VOC EMISSIONS (tpy)	H_2S CONTENT IN STREAM[4]	TOTAL H2S EMISSIONS (lb/hr)	TOTAL H_2S EMISSIONS (tpy)	HAP CONTENT IN STREAM[4]	TOTAL HAP EMISSIONS (lb/hr)	TOTAL HAP EMISSIONS (tpy)	n-Hexane (lb/hr)	Benzene (lb/hr)	Toluene (lb/hr)	n-Hexane (tpy)	Benzene (tpy)	Toluene (tpy)
METHANOL																		
VALVES	25	0.0002161		100.00%	5.40E-03	2.37E-02	0.0000%	0.00E+00	0.00E+00	100.00%	5.40E-03	2.37E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FLANGES	50	0.0000064		100.00%	3.00E-04	1.40E-03	0.0000%	0.00E+00	0.00E+00	100.00%	3.20E-04	1.40E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CONNECTORS	25	0.000243		100.00%	6.10E-03	2.66E-02	0.0000%	0.00E+00	0.00E+00	100.00%	6.08E-03	2.66E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PUMP SEALS	6	0.02866		100.00%	1.72E-01	7.53E-01	0.0000%	0.00E+00	0.00E+00	100.00%	1.72E-01	7.53E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PRVs	0	0.030864		100.00%	0.00E+00	0.00E+00	0.0000%	0.00E+00	0.00E+00	100.00%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
WATER/OIL																		
VALVES	107	0.0002161		1.00%	2.00E-04	1.00E-03	0.0010%	2.33E-07	1.02E-06	7.70%	1.78E-03	7.80E-03	1.33E-03	4.56E-04	8.93E-04	5.83E-03	2.00E-03	3.91E-03
FLANGES	214	0.0000064		1.00%	0.00E+00	1.00E-04	0.0010%	1.38E-08	6.03E-08	7.70%	1.05E-04	4.61E-04	7.88E-05	2.70E-05	5.28E-05	3.45E-04	1.18E-04	2.31E-04
CONNECTORS	107	0.000243		1.00%	3.00E-04	1.10E-03	0.0010%	2.62E-07	1.15E-06	7.70%	2.00E-03	8.77E-03	1.50E-03	5.13E-04	1.00E-03	6.56E-03	2.25E-03	4.40E-03
PRVs	2	0.030864		1.00%	6.00E-04	2.70E-03	0.0010%	6.21E-07	2.72E-06	7.70%	4.76E-03	2.08E-02	3.56E-03	1.22E-03	2.38E-03	1.56E-02	5.33E-03	1.04E-02
LIQUID PRODUCT																		
VALVES	330	0.0002161		0.00%	0.00E+00	0.00E+00	0.0000%	0.00E+00	0.00E+00	0.00%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FLANGES	192	0.0000064		0.00%	0.00E+00	0.00E+00	0.0000%	0.00E+00	0.00E+00	0.00%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CONNECTORS	642	0.000243		0.00%	0.00E+00	0.00E+00	0.0000%	0.00E+00	0.00E+00	0.00%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PUMP SEALS	6	0.02866		0.00%	0.00E+00	0.00E+00	0.0000%	0.00E+00	0.00E+00	0.00%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PRVs	7	0.030864		0.00%	0.00E+00	0.00E+00	0.0000%	0.00E+00	0.00E+00	0.00%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
AMINE PRODUCT																		
VALVES	229	0.0002161		1.00%	5.00E-04	2.20E-03	0.0517%	2.56E-05	1.12E-04	0.00%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FLANGES	458	0.0000064		1.00%	0.00E+00	1.00E-04	0.0517%	1.51E-06	6.63E-06	0.00%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CONNECTORS	229	0.000243		1.00%	6.00E-04	2.40E-03	0.0517%	2.88E-05	1.26E-04	0.00%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PUMP SEALS	4	0.02866		1.00%	1.10E-03	5.00E-03	0.0517%	5.93E-05	2.60E-04	0.00%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PRVs	11	0.030864		1.00%	3.40E-03	1.49E-02	0.0517%	1.76E-04	7.69E-04	0.00%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GYCOL PRODUCT																		
VALVES	191	0.0002161		1.00%	4.00E-04	1.80E-03	0.0000%	0.00E+00	0.00E+00	0.01%	3.51E-06	1.54E-05	1.45E-08	1.15E-06	1.67E-06	6.37E-08	5.05E-06	7.29E-06
FLANGES	382	0.0000064		1.00%	0.00E+00	1.00E-04	0.0000%	0.00E+00	0.00E+00	0.01%	2.08E-07	9.10E-07	8.60E-10	6.82E-08	9.85E-08	3.77E-09	2.99E-07	4.31E-07
CONNECTORS	191	0.000243		1.00%	5.00E-04	2.00E-03	0.0000%	0.00E+00	0.00E+00	0.01%	3.95E-06	1.73E-05	1.64E-08	1.30E-06	1.87E-06	7.17E-08	5.68E-06	8.20E-06
PUMP SEALS	4	0.02866		1.00%	1.10E-03	5.00E-03	0.0000%	0.00E+00	0.00E+00	0.01%	9.76E-06	4.28E-05	4.04E-08	3.20E-06	4.63E-06	1.77E-07	1.40E-05	2.03E-05
PRVs	0	0.030864		1.00%	0.00E+00	0.00E+00	0.0000%	0.00E+00	0.00E+00	0.01%	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL EMISSIONS					**8.79**	**38.52**		**0.19**	**0.84**		**0.55**	**2.41**	**0.31**	**0.06**	**0.11**	**1.309**	**0.258**	**0.470**

[1] Fugitive emission source counts were calculated based on information provided by the facility. Reduction credits are based on the TCEQ Air Permit Technical Guidance for Chemical Sources: Fugitive Guidance (06/2018), utilizing a 28VHP program.

[2] Factors are from TCEQ's "Air Permit Technical Guidance for Chemical Sources: Equipment Leak Fugitives," (October 2000). Emission factors pulled from Facility/Compound Specific Fugitive Emission Factors Table for Oil and Gas Production Operations.

[3] Includes compressors and sample points

[4] For conservative emission calculation purposes, the Total HAP and H_2S content of the water/oil stream was assumed to be equal to that of the condensate stream.

Targa Midstream Services, LLC, Copperhead Gas Plant
Compressor Station - Glycol Dehydrator Emissions Summary

Uncontrolled Dehydrator Emissions [1]

	VOC		H_2S		Total HAP		n-Hexane		Benzene		Toluene		Ethylbenzene		Xylenes	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Regen Overhead	102.1	447.0	1.54	6.7	45.56	199.54	2.10	9.22	22.72	99.53	17.45	76.42	0.74	3.25	2.54	11.12
Flash Tank	82.6	361.9	0.88	3.9	2.26	9.90	1.04	4.57	0.83	3.63	0.35	1.53	0.01	0.04	0.03	0.13

Uncontrolled Dehydrator Emissions [1]

	VOC		H_2S		Total HAP		n-Hexane		Benzene		Toluene		Ethylbenzene		Xylenes	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Condenser Off-Gas	68.4	299.6	1.51	6.6	21.79	95.45	1.56	6.84	13.71	60.05	6.04	26.44	0.10	0.46	0.38	1.66

Controlled Dehydrator Emissions [2]

	VOC		H_2S		Total HAP		n-Hexane		Benzene		Toluene		Ethylbenzene		Xylenes	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
	3.02	13.23	0.05	0.21	0.48	2.11	0.05	0.23	0.29	1.27	0.13	0.56	0.00	0.01	0.01	0.04

Notes
[1] Emissions are calculated using Promax
[2] Flash tank off gas emissions are recycled and recompressed to the inlet or sent to the flare.
Dehydrator vent gas is controlled by the flare, with a control efficiency of 98%

TARGA

Targa Midstream Services, LLC, Copperhead Gas Plant
Compressor Station Flare Steady State Emissions

Unit No(s): Flare
Description: Steady State - Dehydrator Control

Flow Rate:

Pilot	575.0	scf/hr	flare pilot
	0.0138	MMscf/d	scf/hr * 24 (hr/day) / 1e6 SCF/MMscf
	1134.70	BTU/scf	Nominal, sweet natural gas
	0.652	MMBtu/hr	
Storage Tank Gas	0.397	MMscf/yr	
	4.53E-05	MMscf/hr	Vent gas
	0.113	MMBtu/hr	scfh * Maximum heating value
Dehy vent gas	57.308	MMscf/yr	
	0.007	MMscf/hr	Vent gas
	1509.89	Wtd Btu/Scf	
	9.88	MMBtu/hr	scfh * Maximum heating value
	10.64	MMBtu/hr	Pilot + vent gas

Emission Calculations

Pilot Emissions	**NOx**	**CO**	**SO_2**	**H_2S**	**VOC**	**HAPs**	**Units**	
	0.138	0.2755					lb/MMBtu	TNRCC RG-109 (high Btu; other)
				60			ppm	Fuel H2S content of 60 ppm H2S.
					-	-	mol%	Assume no VOC content fuel (methane)
	0.090	**0.18**					lb/hr	lb/MMBtu * MMBtu/hr
			0.006	**6.2E-05**	**-**	**-**	lb/hr	98% combustion H_2S; 100% conversion to SO_2
	0.39	**0.79**	**0.03**	**2.7E-04**	**-**	**-**	tpy	8760 hrs/yr

Storage Tank Flaring	**NO_X**	**CO**	**SO_2**	**H_2S**	**VOC**	**HAPs**		
	0.1380	0.2755					lb/MMBtu	RG-109 Emission Factors for high-Btu, non-steam assisted
				0.01	3.75	0.11	lb/hr	All Controlled VOC and HAP from tanks is represented at the tanks
				98%	98%	98%		Estimated control efficiency for H_2S and VOC
			100%					Estimated H_2S conversion to SO_2 (1-1 molar ratio)
	0.016	**0.03**	**0.022**	**0.0002**	**0.08**	**0.002**	lb/hr	Based on pilot plus flared gas
	0.07	**0.14**	**0.10**	**0.001**	**0.33**	**0.009**	tpy	

Dehy vent gas Flaring	**NO_X**	**CO**	**SO_2**	**H_2S**	**VOC**	**HAPs**		
	0.1380	0.2755					lb/MMBtu	RG-109 Emission Factors for high-Btu, non-steam assisted
				4.79	151.02	24.05	lb/hr	Uncontrolled DEHY emissions
				98%	98%	98%		Estimated control efficiency for H_2S and VOC
			100%					Estimated H_2S conversion to SO_2 (1-1 molar ratio)
	1.363	**2.72**	**8.838**	**0.0958**	**3.02**	**0.48**	lb/hr	Based on pilot plus flared gas
	5.97	**11.92**	**38.71**	**0.420**	**13.23**	**2.11**	tpy	

Total Pilot + Flaring	**NO_X**	**CO**	**SO_2**	**H_2S**	**VOC**	**HAPs**	
	1.47	**2.93**	**8.87**	**0.10**	**3.10**	**0.48**	**lb/hr**
	6.43	**12.84**	**38.83**	**0.42**	**13.56**	**2.12**	**tpy**

Compresor Station Flare Emissions

Unit No(s):	Emergency Flare
Description:	Startup, Shutdown, Maintenance, Malfunction

Flow Rate:

SSM flaring	519,097	scf/yr	
	45217.2	scf/hr	SSM flaring
	51.31	MMBtu/hr	
	642.23	MMBtu/yr	

Emission Calculations

SSM Flaring	**NO_X**	**CO**	**SO_2**	**H_2S**	**VOC**	**HAPs**		
	0.138	0.2755					lb/MMBtu	
				0.41	**621.1**	**10.4**	lb/hr	
				4.66	**7129.7**	**118.9**	lb/yr	
				98%	98%	98%		Estimated control efficiency for H_2S and VOC
			100%					98% combustion H_2S; 100% conversion to SO_2
	7.081	**14.14**	**0.749**	**8.1E-03**	**12.42**	**0.21**	lb/hr	Based on pilot plus flared gas
	0.044	**0.09**	**4.3E-03**	**4.7E-05**	**7.1E-02**	**1.2E-03**	tpy	

Total SSM Flaring	**NO_X**	**CO**	**SO_2**	**H_2S**	**VOC**	**HAPs**	
	7.08	**14.14**	**0.75**	**8.12E-03**	**12.42**	**0.21**	**lb/hr**
	0.04	**0.09**	**4.30E-03**	**4.66E-05**	**7.13E-02**	**1.19E-03**	**tpy**

Nitrogen Rejection Unit

Nitrogen Reject Stream MW: 27.84 lb/lbmol
Nitrogen Reject Stream Flow: 4.99 MMSFD

Component	Mol %	Mass Flow Rate (lb/hr)	Mass Flow Rate (tpy)
Nitrogen	98.52	15,112.00	66,190.56
Carbon Dioxide	0.00	0.00	0.00
Methane	1.48	130.32	570.80
Ethane	0.00	9.61E-09	4.21E-08
Propane	0.00	1.46E-15	6.39E-15
i-Butane	0.00	0.00	0.00
n-Butane	0.00	0.00	0.00
i-Pentane	0.00	0.00	0.00
n-Pentane	0.00	0.00	0.00
Hexanes	0.00	0.00	0.00
Heptanes	0.00	0.00	0.00
Octanes	0.00	0.00	0.00
Benzene	0.00	0.00	0.00
Toluene	0.00	0.00	0.00
Ethylbenzene	0.00	0.00	0.00
Xylenes	0.00	0.00	0.00
Nonanes	0.00	0.00	0.00
Decanes	0.00	0.00	0.00
Total	**100.00**	**15,242**	**66,761**
Total VOC		**1.46E-15**	**6.39E-15**
Total HAP		**0.00**	**0.00**
Total CO2e		**3,258.00**	**14,270.04**

Targa Midstream Services, LLC, Copperhead Gas Plant
SSM - NRU Residue Gas Blowdown

Residue Gas, Unit: **SSM-NRU**

Input Data

	Residue Gas	
Duration of Blowdown Event	48	hr/event
Number of Events per Hour	1	event/hr
Estimated Annual Frequency	1	events/yr
Residue Gas Flow Rate	500,000	scf/hr
	24,000,000	scf/yr

Residue Gas - VOC and H_2S

Compound	Composition [1]	MW	Gas Vented to Atmostphere [3,4]	
	(Mole %)	(lb/lb-mole)	(lb/hr)	(tpy)
Carbon Dioxide	0.12%	44.00	66.83	1.60
Hydrogen Sulfide	0.00%	34.08	0.19	4.54E-03
Nitrogen	3.09%	28.00	1138.73	27.33
methane	96.54%	16.00	20,350.59	488.41
ethane	8.06%	30.07	3194.79	76.67
propane	0.53%	44.10	307.34	7.38
i-butane	0.01%	58.12	3.83	0.09
N-butane	0.01%	58.12	4.59	0.11
i-pentane	0.00%	72.15	0.00	0.00
n-pentane	0.00%	72.15	0.00	0.00
cyclopentane	0.00%	70.10	0.00	0.00
n-hexane	0.00%	86.18	0.00	0.00
cyclohexane	0.00%	84.16	0.00	0.00
other hexanes	0.00%	86.18	0.00	0.00
heptanes	0.00%	100.21	0.00	0.00
Methylcyclohexane	0.00%	98.18	0.00	0.00
2,2,4-trimethylpentane	0.00%	114.23	0.00	0.00
benzene	0.00%	78.11	0.00	0.00
toluene	0.00%	92.14	0.00	0.00
ethylbenzene	0.00%	106.17	0.00	0.00
xylenes	0.00%	106.16	0.00	0.00
octanes	0.00%	114.23	0.00	0.00
nonanes	0.00%	128.26	0.00	0.00
decanes	0.00%	142.29	0.00	0.00
C11	0.00%	156.31	0.00	0.00
C12+	0.00%	170.34	0.00	0.00
Diethanolamine	0.00%	105.14	0.00	0.00
VOC [6]	0.54%		315.76	7.58
Total HAPs	0.00%		0.00	0.00

[1] Composition of the gas stream is obtained from Residue Gas stream.

[2] Per TCEQ "Air Permit Guidance For Chemical Sources, Flare And Vapor Oxidizers" (Draft Oct. 2000).

[3] Gas Vented to Atmosphere (lb/hr) = Hourly Flowrate (scf/hr) x Mole Percent x MW (lb/lb-mole) / 379.5 (scf/lb-mole)

Propane Hourly Gas Vented to Atmosphere (lb/hr) = $\frac{500{,}000 \text{ scf}}{\text{hr}} \mid \frac{0.53\%}{} \mid \frac{44.10 \text{ lb}}{\text{lb-mole}} \mid \frac{\text{lb-mole}}{379.5 \text{ scf}} = \frac{307.34 \text{ lb}}{\text{hr}}$

[4] Annual Gas Vented to Flare (tpy) = Annual Flowrate (scf/yr) x Mole Percent x MW (lb/lb-mole) / 379.5 (scf/lb-mole)x (1 ton / 2000 lb)

Example Propane Vented to Atmosphere Annual Emission Rate (tpy) = $\frac{24{,}000{,}000 \text{ scf}}{\text{yr}} \mid \frac{0.53\%}{} \mid \frac{44.10 \text{ lb}}{\text{lb-mole}} \mid \frac{\text{lb-mole}}{379.5 \text{ scf}} \mid \frac{1 \text{ ton}}{2{,}000 \text{ lb}} = \frac{7.38 \text{ lb}}{\text{hr}}$

[6] Total VOC taken as the sum of NMNEHC.

Targa Midstream Services, LLC, Copperhead Gas Plant
Dehydrator Reboiler Emissions

Unit No(s):	H-1	
Unit No(s):	H-2	
Description:	Dehydrator Reboiler	

Heater Data

Heating rate:	3.0	MMBtu/hr	
Fuel heat value:	1020	Btu/scf	
Fuel usage:	0.0029	MMscf/hr	MMBtu/hr * MMscf/MMBtu
	25.8	MMscf/yr	
Operating hours:	8760	hours/year	

Emission Rates

NO_x	CO	VOC	SO_2[1]	PM^2		
100	84	5.5		7.6	lb/MMscf	AP-42 Tables 1.4-1 and 1.4-2
0.098	0.082	0.005		0.0075	lb/MMBtu	
0.29	**0.25**	**0.016**	**0.020**	**0.022**	**lb/hr**	
1.29	**1.08**	**0.071**	**0.087**	**0.098**	**tpy**	

HCOH[4]	Benzene[4]	Toluene[4]	Acetaldehyde[4]	Methanol[4]	Total HAPs[4]	
7.50E-02	0.0021	3.40E-03			lb/MMscf	
7.35E-05	2.06E-06	3.33E-06			lb/MMBtu	
0.0002	**0.00001**	**0.00001**	**0.00000**	**0.00000**	**0.0002**	**lb/hr**
0.0010	**0.00003**	**0.00004**	**0.00000**	**0.00000**	**0.0010**	**tpy**

CO_2	CH_4	N_2O	CO_2e		
120000	2.3	2.2		lb/MMscf	AP-42 Table 1.4-2
1545.88	**0.030**	**0.028**	**1555.07**	**tpy**	
1	25	298		GWP	

Notes

[1] SO_2 emissions are based on the conversion of H_2S to SO_2 during the combustion process and a 1:1 molar ratio conversion of H_2S to SO_2. The fuel gas concentration is based on 500 ppm of H_2S.

[2] It is assumed that TSP = PM_{10} = $PM_{2.5}$

Targa Midstream Services, LLC, Copperhead Gas Plant
HMO HEATER EMISSIONS

Unit No(s): H-1701-CHP
Description: HMO Heater 1701

Heater Data

Heating rate:	73.0	MMBtu/hr	
Fuel heat value:	1020	Btu/scf	
Fuel usage:	0.0716	MMscf/hr	MMBtu/hr * MMscf/MMBtu
	627.3	MMscf/yr	
Operating hours:	8760	hours/year	

Emission Rates

NO_x	CO	VOC	SO_2[1]	PM^2		
		5.5		7.6	lb/MMscf	AP-42 Tables 1.4-1 and 1.4-2
0.0365	0.037	0.005		0.0075	lb/MMBtu	
2.67	**2.70**	**0.394**	**0.048**	**0.544**	**lb/hr**	
11.68	**11.84**	**1.725**	**0.212**	**2.384**	**tpy**	

HCOH[4]	Benzene[4]	Toluene[4]	Acetaldehyde[4]	Methanol[4]	Total HAPs[4]	
7.50E-02	0.0021	3.40E-03			lb/MMscf	
7.35E-05	2.06E-06	3.33E-06			lb/MMBtu	
0.0054	**0.0002**	**0.0002**	**0.00000**	**0.00000**	**0.01**	**lb/hr**
0.0235	**0.0007**	**0.0011**	**0.00000**	**0.00000**	**0.03**	**tpy**

CO_2	CH_4	N_2O	CO_2e		
120000	2.3	2.2		lb/MMscf	AP-42 Table 1.4-2
37637.08	**0.721**	**0.690**	**37860.74**	**tpy**	
1	25	298		GWP	

Notes

[1] SO_2 emissions are based on the conversion of H_2S to SO_2 during the combustion process and a 1:1 molar ratio conversion of
[2] It is assumed that TSP = PM_{10} = $PM_{2.5}$

HMO HEATER EMISSIONS

Unit No(s): H-1702-CHP
Description: HMO Heater 1702

Heater Data

Heating rate:	73.0	MMBtu/hr	
Fuel heat value:	1020	Btu/scf	
Fuel usage:	0.0716	MMscf/hr	MMBtu/hr * MMscf/MMBtu
	627.3	MMscf/yr	
Operating hours:	8760	hours/year	

Emission Rates

NO_x	CO	VOC	SO_2[1]	PM^2		
		5.5		7.6	lb/MMscf	AP-42 Tables 1.4-1 and 1.4-2
0.0365	0.037	0.005		0.0075	lb/MMBtu	
2.67	**2.70**	**0.394**	**0.048**	**0.544**	**lb/hr**	
11.68	**11.84**	**1.725**	**0.212**	**2.384**	**tpy**	

HCOH[4]	Benzene[4]	Toluene[4]	Acetaldehyde[4]	Methanol[4]	Total HAPs[4]	
7.50E-02	0.0021	3.40E-03			lb/MMscf	
7.35E-05	2.06E-06	3.33E-06			lb/MMBtu	
0.0054	**0.0002**	**0.0002**	**0.00000**	**0.00000**	**0.006**	**lb/hr**
0.0235	**0.0007**	**0.0011**	**0.00000**	**0.00000**	**0.03**	**tpy**

CO_2	CH_4	N_2O	CO_2e		
120000	2.3	2.2		lb/MMscf	AP-42 Table 1.4-2
37637.08	**0.721**	**0.690**	**37860.74**	**tpy**	
1	25	298		GWP	

Notes

[1] SO_2 emissions are based on the conversion of H_2S to SO_2 during the combustion process and a 1:1 molar ratio conversion of

[2] It is assumed that TSP = PM_{10} = $PM_{2.5}$

Targa Midstream Services, LLC, Copperhead Gas Plant
HMO HEATER EMISSIONS

Unit No(s): H-1703-CHP
Description: HMO Heater 1703

Heater Data

Heating rate:	73.0	MMBtu/hr	
Fuel heat value:	1020	Btu/scf	
Fuel usage:	0.0716	MMscf/hr	MMBtu/hr * MMscf/MMBtu
	627.3	MMscf/yr	
Operating hours:	8760	hours/year	

Emission Rates

NO_x	CO	VOC	SO_2[1]	PM^2		
		5.5		7.6	lb/MMscf	AP-42 Tables 1.4-1 and 1.4-2
0.0365	0.037	0.005		0.0075	lb/MMBtu	
2.67	**2.70**	**0.394**	**0.048**	**0.544**	**lb/hr**	
11.68	**11.84**	**1.725**	**0.212**	**2.384**	**tpy**	

HCOH[4]	Benzene[4]	Toluene[4]	Acetaldehyde[4]	Methanol[4]	Total HAPs[4]	
7.50E-02	0.0021	3.40E-03			lb/MMscf	
7.35E-05	2.06E-06	3.33E-06			lb/MMBtu	
0.0054	**0.0002**	**0.0002**	**0.00000**	**0.00000**	**0.006**	**lb/hr**
0.0235	**0.0007**	**0.0011**	**0.00000**	**0.00000**	**0.03**	**tpy**

CO_2	CH_4	N_2O	CO_2e		
120000	2.3	2.2		lb/MMscf	AP-42 Table 1.4-2
37637.08	**0.721**	**0.690**	**37860.74**	**tpy**	
1	25	298		GWP	

Notes

[1] SO_2 emissions are based on the conversion of H_2S to SO_2 during the combustion process and a 1:1 molar ratio conversion of H_2S
[2] It is assumed that TSP = PM_{10} = $PM_{2.5}$

Targa Midstream Services, LLC, Copperhead Gas Plant
HMO HEATER EMISSIONS

Unit No(s):	H-1704-CHP		
Description:	HMO Heater 1704		

Heater Data

Heating rate:	35.5	MMBtu/hr	
Fuel heat value:	1020	Btu/scf	
Fuel usage:	0.0348	MMscf/hr	MMBtu/hr * MMscf/MMBtu
	304.9	MMscf/yr	
Operating hours:	8760	hours/year	

Emission Rates

NO_x	CO	VOC	SO_2[1]	PM^2		
		5.5		7.6	lb/MMscf	AP-42 Tables 1.4-1 and 1.4-2
0.0365	0.037	0.005		0.0075	lb/MMBtu	
1.30	**1.31**	**0.191**	**0.024**	**0.265**	**lb/hr**	
5.68	**5.75**	**0.838**	**0.103**	**1.159**	**tpy**	

HCOH[4]	Benzene[4]	Toluene[4]	Acetaldehyde[4]	Methanol[4]	Total HAPs[4]		
7.50E-02	0.0021	3.40E-03				lb/MMscf	
7.35E-05	2.06E-06	3.33E-06				lb/MMBtu	
0.0026	**0.0001**	**0.0001**	**0.00000**	**0.00000**	**0.003**	**lb/hr**	
0.0114	**0.0003**	**0.0005**	**0.00000**	**0.00000**	**0.01**	**tpy**	

CO_2	CH_4	N_2O	CO_2e		
120000	2.3	2.2		lb/MMscf	AP-42 Table 1.4-2
18292.94	**0.351**	**0.335**	**18401.65**	**tpy**	
1	25	298		GWP	

Notes

[1] SO_2 emissions are based on the conversion of H_2S to SO_2 during the combustion process and a 1:1 molar ratio conversion of
[2] It is assumed that TSP = PM_{10} = $PM_{2.5}$

Exhaust Parameters

Heat Rate:	35500	MBtu/hr	
Exhaust temp (Tstk):	475	°F	Engineering estimate
Site Elevation:	3594	ft MSL	
Ambient pressure (Pstk):	6.79	in. Hg	Calculated based on elevation
F factor:	10610	wscf/MMBtu	40 CFR 60 Appx A Method 19
Exhaust flow	6277.6	scfm	Calculated from F factor and heat rate
Exhaust flow:	49717.6	acfm	scfm * (Pstd/Pstk)*(Tstk/Tstd), Pstd = 29.92 "Hg, Tstd = 520 °R
Stack diameter:	3.5	ft	Engineering estimate
Stack height:	20	ft	Engineering estimate
Exhaust velocity:	86.13	ft/sec	Exhaust flow ÷ stack area

REGEN GAS HEATER EMISSIONS

Unit No(s): H-4701-CHP
Description: Regen Gas Heater 4701

Heater Data

Heating rate:	13.0	MMBtu/hr	
Fuel heat value:	1020	Btu/scf	
Fuel usage:	0.0128	MMscf/hr	MMBtu/hr * MMscf/MMBtu
	111.8	MMscf/yr	
Operating hours:	8760	hours/year	

Emission Rates

NO_x	CO	VOC	SO_2[1]	PM^2		
		5.5		7.6	lb/MMscf	AP-42 Tables 1.4-1 and 1.4-2
0.0365	0.037	0.005		0.0075	lb/MMBtu	
0.48	**0.48**	**0.070**	**0.009**	**0.097**	**lb/hr**	
2.08	**2.11**	**0.307**	**0.038**	**0.425**	**tpy**	

HCOH[4]	Benzene[4]	Toluene[4]	Acetaldehyde[4]	Methanol[4]	Total HAPs[4]	
7.50E-02	0.0021	3.40E-03			lb/MMscf	
7.35E-05	2.06E-06	3.33E-06			lb/MMBtu	
0.0010	**0.00003**	**0.0000**	**0.00000**	**0.00000**	**0.001**	**lb/hr**
0.0042	**0.0001**	**0.0002**	**0.00000**	**0.00000**	**0.00**	**tpy**

CO_2	CH_4	N_2O	CO_2e		
120000	2.3	2.2		lb/MMscf	AP-42 Table 1.4-2
6707.58	**0.129**	**0.123**	**6747.44**	**tpy**	
1	25	298		GWP	

Notes

[1] SO_2 emissions are based on the conversion of H_2S to SO_2 during the combustion process and a 1:1 molar ratio conversion of H_2S

[2] It is assumed that TSP = PM_{10} = $PM_{2.5}$

Targa Midstream Services, LLC, Copperhead Gas Plant
HMO HEATER EMISSIONS

Unit No(s): H-1701-CH2
Description: HMO Heater 1701

Heater Data

Heating rate:	73.0	MMBtu/hr	
Fuel heat value:	1020	Btu/scf	
Fuel usage:	0.0716	MMscf/hr	MMBtu/hr * MMscf/MMBtu
	627.3	MMscf/yr	
Operating hours:	8760	hours/year	

Emission Rates

NO_x	CO	VOC	SO_2[1]	PM^2		
		5.5		7.6	lb/MMscf	AP-42 Tables 1.4-1 and 1.4-2
0.0365	0.037	0.005		0.0075	lb/MMBtu	
2.67	**2.70**	**0.394**	**0.048**	**0.544**	**lb/hr**	
11.68	**11.84**	**1.725**	**0.212**	**2.384**	**tpy**	

HCOH[4]	Benzene[4]	Toluene[4]	Acetaldehyde[4]	Methanol[4]	Total HAPs[4]	
7.50E-02	0.0021	3.40E-03			lb/MMscf	
7.35E-05	2.06E-06	3.33E-06			lb/MMBtu	
0.0054	**0.0002**	**0.0002**	**0.00000**	**0.00000**	**0.006**	**lb/hr**
0.0235	**0.0007**	**0.0011**	**0.00000**	**0.00000**	**0.03**	**tpy**

CO_2	CH_4	N_2O	CO_2e		
120000	2.3	2.2		lb/MMscf	AP-42 Table 1.4-2
37637.08	**0.721**	**0.690**	**37860.74**	**tpy**	
1	25	298		GWP	

Notes

[1] SO_2 emissions are based on the conversion of H_2S to SO_2 during the combustion process and a 1:1 molar ratio conversion of H_2S
[2] It is assumed that TSP = PM_{10} = $PM_{2.5}$

HMO HEATER EMISSIONS

Unit No(s): H-1702-CH2
Description: HMO Heater 1702

Heater Data

Heating rate:	73.0	MMBtu/hr	
Fuel heat value:	1020	Btu/scf	
Fuel usage:	0.0716	MMscf/hr	MMBtu/hr * MMscf/MMBtu
	627.3	MMscf/yr	
Operating hours:	8760	hours/year	

Emission Rates

NO_x	CO	VOC	SO_2[1]	PM^2		
		5.5		7.6	lb/MMscf	AP-42 Tables 1.4-1 and 1.4-2
0.0365	0.037	0.005		0.0075	lb/MMBtu	
2.67	**2.70**	**0.394**	**0.048**	**0.544**	**lb/hr**	
11.68	**11.84**	**1.725**	**0.212**	**2.384**	**tpy**	

HCOH[4]	Benzene[4]	Toluene[4]	Acetaldehyde[4]	Methanol[4]	Total HAPs[4]	
7.50E-02	0.0021	3.40E-03			lb/MMscf	
7.35E-05	2.06E-06	3.33E-06			lb/MMBtu	
0.0054	**0.0002**	**0.0002**	**0.00000**	**0.00000**	**0.006**	**lb/hr**
0.0235	**0.0007**	**0.0011**	**0.00000**	**0.00000**	**0.03**	**tpy**

CO_2	CH_4	N_2O	CO_2e		
120000	2.3	2.2		lb/MMscf	AP-42 Table 1.4-2
37637.08	**0.721**	**0.690**	**37860.74**	**tpy**	
1	25	298		GWP	

Notes

[1] SO_2 emissions are based on the conversion of H_2S to SO_2 during the combustion process and a 1:1 molar ratio conversion of H_2S

[2] It is assumed that TSP = PM_{10} = $PM_{2.5}$

Targa Midstream Services, LLC, Copperhead Gas Plant
HMO HEATER EMISSIONS

Unit No(s): H-1703-CH2
Description: HMO Heater 1703

Heater Data

Heating rate:	73.0	MMBtu/hr	
Fuel heat value:	1020	Btu/scf	
Fuel usage:	0.0716	MMscf/hr	MMBtu/hr * MMscf/MMBtu
	627.3	MMscf/yr	
Operating hours:	8760	hours/year	

Emission Rates

NO_x	CO	VOC	SO_2[1]	PM^2		
		5.5		7.6	lb/MMscf	AP-42 Tables 1.4-1 and 1.4-2
0.0365	0.037	0.005		0.0075	lb/MMBtu	
2.67	**2.70**	**0.394**	**0.048**	**0.544**	**lb/hr**	
11.68	**11.84**	**1.725**	**0.212**	**2.384**	**tpy**	

HCOH[4]	Benzene[4]	Toluene[4]	Acetaldehyde[4]	Methanol[4]	Total HAPs[4]	
7.50E-02	0.0021	3.40E-03			lb/MMscf	
7.35E-05	2.06E-06	3.33E-06			lb/MMBtu	
0.0054	**0.0002**	**0.0002**	**0.00000**	**0.00000**	**0.006**	**lb/hr**
0.0235	**0.0007**	**0.0011**	**0.00000**	**0.00000**	**0.03**	**tpy**

CO_2	CH_4	N_2O	CO_2e		
120000	2.3	2.2		lb/MMscf	AP-42 Table 1.4-2
37637.08	**0.721**	**0.690**	**37860.74**	**tpy**	
1	25	298		GWP	

Notes

[1] SO_2 emissions are based on the conversion of H_2S to SO_2 during the combustion process and a 1:1 molar ratio conversion of
[2] It is assumed that TSP = PM_{10} = $PM_{2.5}$

Targa Midstream Services, LLC, Copperhead Gas Plant
HMO HEATER EMISSIONS

Unit No(s): H-1704-CH2
Description: HMO Heater 1704

Heater Data

Heating rate:	35.5	MMBtu/hr	
Fuel heat value:	1020	Btu/scf	
Fuel usage:	0.0348	MMscf/hr	MMBtu/hr * MMscf/MMBtu
	304.9	MMscf/yr	
Operating hours:	8760	hours/year	

Emission Rates

NO_x	CO	VOC	SO_2[1]	PM^2		
		5.5		7.6	lb/MMscf	AP-42 Tables 1.4-1 and 1.4-2
0.0365	0.037	0.005		0.0075	lb/MMBtu	
1.30	**1.31**	**0.191**	**0.024**	**0.265**	**lb/hr**	
5.68	**5.75**	**0.838**	**0.103**	**1.159**	**tpy**	

HCOH[4]	Benzene[4]	Toluene[4]	Acetaldehyde[4]	Methanol[4]	Total HAPs[4]	
7.50E-02	0.0021	3.40E-03			lb/MMscf	
7.35E-05	2.06E-06	3.33E-06			lb/MMBtu	
0.0026	**0.0001**	**0.0001**	**0.00000**	**0.00000**	**0.003**	**lb/hr**
0.0114	**0.0003**	**0.0005**	**0.00000**	**0.00000**	**0.01**	**tpy**

CO_2	CH_4	N_2O	CO_2e		
120000	2.3	2.2		lb/MMscf	AP-42 Table 1.4-2
18292.94	**0.351**	**0.335**	**18401.65**	**tpy**	
1	25	298		GWP	

Notes

[1] SO_2 emissions are based on the conversion of H_2S to SO_2 during the combustion process and a 1:1 molar ratio conversion of
[2] It is assumed that TSP = PM_{10} = $PM_{2.5}$

Targa Midstream Services, LLC, Copperhead Gas Plant
REGEN GAS HEATER EMISSIONS

Unit No(s): H-4701-CH2
Description: Regen Gas Heater 4701

Heater Data

Heating rate:	13.0	MMBtu/hr	
Fuel heat value:	1020	Btu/scf	
Fuel usage:	0.0128	MMscf/hr	MMBtu/hr * MMscf/MMBtu
	111.8	MMscf/yr	
Operating hours:	8760	hours/year	

Emission Rates

NO_x	CO	VOC	SO_2[1]	PM[2]		
		5.5		7.6	lb/MMscf	AP-42 Tables 1.4-1 and 1.4-2
0.0365	0.037	0.005		0.0075	lb/MMBtu	
0.48	**0.48**	**0.070**	**0.009**	**0.097**	**lb/hr**	
2.08	**2.11**	**0.307**	**0.038**	**0.425**	**tpy**	

HCOH[4]	Benzene[4]	Toluene[4]	Acetaldehyde[4]	Methanol[4]	Total HAPs[4]	
7.50E-02	0.0021	3.40E-03			lb/MMscf	
7.35E-05	2.06E-06	3.33E-06			lb/MMBtu	
0.0010	**0.0000**	**0.0000**	**0.00000**	**0.00000**	**0.001**	**lb/hr**
0.0042	**0.0001**	**0.0002**	**0.00000**	**0.00000**	**0.00**	**tpy**

CO_2	CH_4	N_2O	CO_2e		
120000	2.3	2.2		lb/MMscf	AP-42 Table 1.4-2
6707.58	**0.129**	**0.123**	**6747.44**	**tpy**	
1	25	298		GWP	

Notes

[1] SO_2 emissions are based on the conversion of H_2S to SO_2 during the combustion process and a 1:1 molar ratio conversion of
[2] It is assumed that TSP = PM_{10} = $PM_{2.5}$

Targa Midstream Services, LLC, Copperhead Gas Plant
FLARE EMISSIONS

Unit No(s): FL-1800-CHP
Description: Flare 1: Steady State

Flow Rate:

Pilot	195.0	scf/hr	flare pilot
Sweep Gas	1185.0	scf/hr	
Assist Gas	170.0	scf/hr	
	0.0372	MMscf/d	scf/hr * 24 (hr/day) / 1e6 SCF/MMscf
	979.63	BTU/scf	Nominal, sweet natural gas
	1.518	MMBtu/hr	

Emission Calculations

Pilot/Sweep/Assist Emissions	**NOx**	**CO**	**SO_2**	**H_2S**	**VOC**	**HAPs**	**Units**	
	0.138	0.2755					lb/MMBtu	TNRCC RG-109 (high Btu; other)
				4			ppm	Fuel H2S content of 4 ppm H2S.
					-	-	mol%	Assume no VOC content fuel (metha
	0.210	**0.42**					lb/hr	lb/MMBtu * MMBtu/hr
			0.000	**1.4E-06**	**-**	**-**	lb/hr	98% combustion H_2S; 100% convers
	0.92	**1.83**	**0.00**	**6.1E-06**	**-**	**-**	tpy	8760 hrs/yr

Total Pilot/Sweep/Assist + Flaring	**NO_X**	**CO**	**SO_2**	**H_2S**	**VOC**	**HAPs**	
	0.21	**0.42**	**0.0001**	**0.00**	**0.00**	**0.00**	**lb/hr**
	0.92	**1.83**	**0.0006**	**0.00**	**0.000**	**0.0000**	**tpy**

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

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

Targa Midstream Services, LLC, Copperhead Gas Plant
Flare Emissions

Unit No(s): FL-1800-CH2
Description: Flare 2: Steady State

Flow Rate:

Pilot	195.0	scf/hr	flare pilot
Sweep Gas	1185.0	scf/hr	
Assist Gas	170.0	scf/hr	
	0.0372	MMscf/d	scf/hr * 24 (hr/day) / 1e6 SCF/MMscf
	979.63	BTU/scf	Nominal, sweet natural gas
	1.518	MMBtu/hr	

Emission Calculations

Pilot/Sweep/Assist Emissions	**NOx**	**CO**	**SO_2**	**H_2S**	**VOC**	**HAPs**	**Units**	
	0.138	0.2755					lb/MMBtu	TNRCC RG-109 (high Btu; other)
				4			ppm	Fuel H2S content of 60 ppm H2S.
					-	-	mol%	Assume no VOC content fuel (methane)
	0.210	**0.42**					lb/hr	lb/MMBtu * MMBtu/hr
			0.000	**1.4E-06**	**-**	**-**	lb/hr	98% combustion H_2S; 100% conversion to SO_2
	0.92	**1.83**	**0.00**	**6.1E-06**	**-**	**-**	tpy	8760 hrs/yr

Total Pilot/Sweep/Assist + Flaring	**NO_X**	**CO**	**SO_2**	**H_2S**	**VOC**	**HAPs**	
	0.21	**0.42**	**0.00**	**0.00**	**0.00**	**0.00**	**lb/hr**
	0.92	**1.83**	**0.00**	**0.00**	**0.000**	**0.0000**	**tpy**

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

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

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Targa Midstream Services, LLC, Copperhead Gas Plant
FLARE EMISSIONS

Unit No(s): FL-1800-CHP
Unit No(s): FL-1800-CH2
Description: Flare: Startup, Shutdown, Maintenance, Malfunction

Flow Rate:

Assist/Residue Gas	660000.0	scf/hr	
	15.8400	MMscf/d	scf/hr * 24 (hr/day) / 1e6 SCF/MMscf
	36.3000	MMScf/yr	
	979.63	BTU/scf	Nominal, sweet natural gas
	646.555	MMBtu/hr	
	35560.506	MMBtu/yr	

Amine	8.35	MMscf/yr	
	0.15	MMscf/hr	Vent gas
	12.545	MMBtu/hr	scfh * Maximum heating value
	55.0	AGI Downtime hrs	

Residue	599.49	MMscf/yr	
	7.99	MMscf/hr	Vent gas
	7,830.42	MMBtu/hr	scfh * Maximum heating value
	75.0	Residue Gas Flaring hrs	

Inlet	41.42	MMscf/yr	
	10.35	MMscf/hr	Vent gas
	12,976.578	MMBtu/hr	scfh * Maximum heating value
	4.0	Inlet Gas Flaring hrs	

Emission Calculations

Assist Emissions	**NOx**	**CO**	**SO_2**	**H_2S**	**VOC**	**HAPs**	**Units**	
	0.138	0.2755					lb/MMBtu	TNRCC RG-109 (high Btu; other)
				4			ppm	Fuel H2S content of 60 ppm H2S.
				0.0002	0.01	0.00E+00	lb/hr	
				98%	98%	98%		
					-	-		
	89.225	**178.13**	**0.0004**				lb/hr	lb/MMBtu * MMBtu/hr
			0.446	**4.7E-03**	**0.000**	**0.000**	lb/hr	98% combustion H_2S; 100% conversion to SO_2
	2.45	**4.90**	**0.012**	**1.3E-05**	**0.000**	**0.000**	tpy	

Inlet Flaring	**NO_X**	**CO**	**SO_2**	**H_2S**	**VOC**	**HAPs**		
	0.1380	0.2755					lb/MMBtu	RG-109 Emission Factors for high-Btu, non-steam assisted
							lb/hr	All Controlled VOC and HAP from tanks is represented at the tanks
				730.00			ppm	
				678.83	23.31	7.66	lb/hr	
				98%	98%	98%		Estimated control efficiency for H_2S and VOC
			100%					Estimated H_2S conversion to SO_2 (1-1 molar ratio)
	1790.768	**3575.047**	**1,252.236**	**13.6**	**0.47**	**0.153**	lb/hr	Based on pilot plus flared gas
	3.58	**7.15**	**2.50**	**0.03**	**0.00**	**0.000**	tpy	

Residue Gas Flaring	**NO_X**	**CO**	**SO_2**	**H_2S**	**VOC**	**HAPs**		
	0.1380	0.2755					lb/MMBtu	RG-109 Emission Factors for high-Btu, non-steam assisted
				4.00			ppm	
				2.87	0.01	0.00E+00	lb/hr	Uncontrolled Amine emissions
				98%	98%	98%		Estimated control efficiency for H_2S and VOC
			100%					Estimated H_2S conversion to SO_2 (1-1 molar ratio)
	1080.598	**2157.281**	**5.296**	**0.0574**	**0.00**	**0.00**	lb/hr	Based on pilot plus flared gas
	40.52	**80.90**	**0.20**	**0.00**	**0.00**	**0.00**	tpy	

Amine and other vent gas Flaring	**NO_X**	**CO**	**SO_2**	**H_2S**	**VOC**	**HAPs**		
	0.1380	0.2755					lb/MMBtu	RG-109 Emission Factors for high-Btu, non-steam assisted
				50,000.00			ppm	
				681.73	23.31	7.58	lb/hr	Uncontrolled Amine emissions
				98%	98%	98%		Estimated control efficiency for H_2S and VOC
			100%					Estimated H_2S conversion to SO_2 (1-1 molar ratio)
	1.731	**3.456**	**1,257.595**	**13.6346**	**0.47**	**0.15**	lb/hr	Based on pilot plus flared gas
	0.05	**0.10**	**34.58**	**0.37**	**0.013**	**0.0042**	tpy	

Total Flaring	**NO_X**	**CO**	**SO_2**	**H_2S**	**VOC**	**HAPs**		
	1790.77	**3575.05**	**1257.60**	**13.63**	**0.47**	**0.15**	**lb/hr**	This is based on worst case scenario assuming AGI downtime and inlet fla
	46.61	**93.04**	**37.30**	**0.40**	**0.01**	**0.00**	**tpy**	

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

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

VCU
UNIT ID TK-1907-CHP, TK-1908-CHP, TK-1907-CH2, TK-1908-CH2

Total Emissions from VCU

Pollutant	(lb/hr)	(tpy)
NO_x	0.06	0.27
CO	0.12	0.54
VOC	0.32	1.40
SO_2	2.59	11.33
H_2S	0.03	0.12
HAPs	0.29	1.28

Streams Sent to VCU

Pre-Control Emissions	Produced Water Tank W&B		Produced Water Tank Flash		Produced Water Loading		Pilot[1]		TOTAL		Pilot Composition	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy		Wt%
Total VOC	1.21	5.29	10.82	47.40	2.95E-03	0.01	1.78E-08	7.79E-08	**12.03**	**52.70**	Total VOC	0.00%
Total HAPs	13.45	58.92	9.00	39.41	4.45	19.51	--	--	**26.90**	**117.84**	Total HAPs	0
H2S	0.43	1.88	0.47	2.07	0.47	2.07	9.15E-06	4.01E-05	**1.38**	**6.03**	H2S	0.000421283
Propane	0.01	0.02	1.10	4.80	1.68E-18	7.36E-18	1.78E-08	7.79E-08	**1.10**	**4.82**	Propane	8.18955E-07
i-Butane	3.82E-04	1.68E-03	0.10	0.45	5.25E-20	2.30E-19	3.44E-14	1.51E-13	**0.10**	**0.46**	i-Butane	1.58594E-12
n-Butane	2.46E-03	0.01	0.51	2.25	4.20E-19	1.84E-18	1.71E-14	7.49E-14	**0.52**	**2.26**	n-Butane	7.87519E-13
i-Pentane	2.45E-04	1.07E-03	0.07	0.31	5.25E-20	2.30E-19	--	--	**0.07**	**0.31**	i-Pentane	0
n-Pentane	4.71E-05	2.06E-04	0.04	0.15	6.57E-21	2.88E-20	--	--	**0.04**	**0.15**	n-Pentane	0
Cyclohexane	--	--	--	--	--	--	--	--	**--**	**--**	Cyclohexane	0
Other C6	--	--	--	--	--	--	--	--	**--**	**--**	Other C6	0
Heptanes	2.80E-06	1.23E-05	4.05E-03	0.02	4.10E-22	1.80E-21	--	--	**4.05E-03**	**0.02**	Heptanes	0
Octanes	1.25E-07	5.47E-07	4.26E-04	1.87E-03	2.56E-23	1.12E-22	--	--	**4.26E-04**	**1.87E-03**	Octanes	0
Nonanes	4.85E-08	2.12E-07	1.56E-04	6.82E-04	6.41E-24	2.81E-23	--	--	**1.56E-04**	**6.82E-04**	Nonanes	0
Decanes +	7.38E-11	3.23E-10	8.02E-07	3.51E-06	1.57E-26	6.86E-26	--	--	**8.02E-07**	**3.51E-06**	Decanes +	0
Benzene	0.82	3.59	6.14	26.91	3.40	14.88	--	--	**10.36**	**45.38**	Benzene	0
Toluene	0.35	1.52	2.60	11.38	1.00	4.37	--	--	**3.94**	**17.27**	Toluene	0
Ethylbenzene	0.01	0.06	0.11	0.48	0.04	0.16	--	--	**0.16**	**0.70**	Ethyl benzene	0
Xylenes	0.02	0.08	0.14	0.61	0.02	0.10	--	--	**0.18**	**0.79**	Xylenes	0
Cumene	--	--	--	--	--	--	--	--	**--**	**--**	Cumene	0
n-Hexane	6.60E-06	2.89E-05	0.01	0.03	1.64E-21	7.19E-21	--	--	**0.01**	**0.03**	n-Hexane	0
2,2,4 Trimethylpentane	--	--	--	--	--	--	--	--	--	--	2,2,4 Trimethylpent	0

[1] Pilot gas component flow rates are calculated from the pilot gas flow rate and the fuel gas composition as follows:
(Component Flow Rate, lb/hr) = (Component Content, Wt%) x (Pilot gas flow rate, scf/hr) x (Pilot Gas Molecular Weight, lb/lb-mole) / (Ideal Gas Constant, scf/lb-mole)

Stream Properties

	Produced Water Tank W&B		Produced Water Tank Flash		Produced Water Loading		Pilot		TOTAL/AVERAGE	
	Hourly	Annual	Hourly	Annual	Hourly	Annual	Hourly	Annual	Hourly	Annual
Vapor MW (lb/lb-mole)	45.02	45.02	41.82	41.82	45.02	45.02	16.48	16.48	41.01	41.01
VOC Content (Wt%)	7.82%	7.82%	6.93%	6.93%	7.8223%	7.8223%	0.0001%	0.0001%	6.7130%	6.7130%
Heat Value (Btu/scf)	363.34	363.34	434.03	434.03	363.34	363.34	980	980	451	451
Vapor Volumetric Flow[1] (scf)	71.57	626,926	800.5	7,012,136	72	626,926	50	438,000	994	8,703,988

[1] Vapor Volumetric Flow Rates are calculated from the VOC emission rates as follows:
(Vapor Volumetric Flow Rate scf) = (VOC Emissions, lb) x (Ideal Cas Constant, 379.5 scf/lb-mole) / (Vapor Molecular Weight, lb/lb-mole) / (Vapor VOC Content, Wt%)

Vapor Combustion Unit

VCU Values	Produced Water Tank W&B		Produced Water Tank Flash		Produced Water Loading		Pilot	
	Hourly	Annual	Hourly	Annual	Hourly	Annual	Hourly	Annual
VOC DRE (C3)	99%	99%	99%	99%	99%	99%	99%	99%
VOC DRE (C4+)	98%	98%	98%	98%	98%	98%	98%	98%
H_2S DRE	98%	98%	98%	98%	98%	98%	98%	98%
NOx EF(lb/MMBtu)[1]	0.138	0.138	0.138	0.138	0.138	0.138	0.138	0.138
CO EF(lb/MMBtu)[1]	0.2755	0.2755	0.2755	0.2755	0.2755	0.2755	0.2755	0.2755

[1] Emission Factors from TCEQ Air Permit Technical Guidance for Chemical Sources: Flares and Vapor Oxidizers (RG-109, 10/2000).

Post-Control Emissions	Produced Water Tank W&B		Produced Water Tank Flash		Produced Water Loading		Pilot		TOTAL	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
NOx	3.59E-03	0.02	0.05	0.21	3.59E-03	0.02	0.01	0.03	**0.06**	**0.27**
CO	0.01	0.03	0.10	0.42	0.01	0.03	0.01	0.06	**0.12**	**0.54**
SO_2	0.81	3.54	0.89	3.90	0.89	3.90	1.72E-05	7.53E-05	**2.59**	**11.33**
Total VOC	0.02	0.11	0.21	0.90	0.09	0.39	1.78E-10	7.79E-10	**0.32**	**1.40**
Total HAPs	0.02	0.11	0.18	0.79	0.09	0.39	--	--	**0.29**	**1.28**
H2S	0.01	0.04	0.01	0.04	0.01	0.04	1.83E-07	8.01E-07	**0.03**	**0.12**
Propane	5.69E-05	2.49E-04	0.01	0.05	1.68E-20	7.36E-20	1.78E-10	7.79E-10	**0.01**	**0.05**
i-Butane	7.65E-06	3.35E-05	2.07E-03	0.01	1.05E-21	4.60E-21	6.89E-16	3.02E-15	**2.08E-03**	**0.01**
n-Butane	4.91E-05	2.15E-04	0.01	0.05	8.40E-21	3.68E-20	3.42E-16	1.50E-15	**0.01**	**0.05**
i-Pentane	4.90E-06	2.15E-05	1.43E-03	0.01	1.05E-21	4.60E-21	--	--	**1.43E-03**	**0.01**
n-Pentane	9.42E-07	4.12E-06	7.01E-04	3.07E-03	1.31E-22	5.75E-22	--	--	**7.02E-04**	**3.08E-03**
Cyclohexane	--	--	--	--	--	--	--	--	**--**	**--**
Other C6	--	--	--	--	--	--	--	--	**--**	**--**
Heptanes	5.61E-08	2.46E-07	8.09E-05	3.54E-04	8.21E-24	3.59E-23	--	--	**8.10E-05**	**3.55E-04**
Octanes	2.50E-09	1.09E-08	8.52E-06	3.73E-05	5.13E-25	2.25E-24	--	--	**8.52E-06**	**3.73E-05**
Nonanes	9.70E-10	4.25E-09	3.11E-06	1.36E-05	1.28E-25	5.62E-25	--	--	**3.11E-06**	**1.36E-05**
Decanes +	1.48E-12	6.47E-12	1.60E-08	7.03E-08	3.13E-28	1.37E-27	--	--	**1.60E-08**	**7.03E-08**
Benzene	0.02	0.07	0.12	0.54	0.07	0.30	--	--	**0.21**	**0.91**
Toluene	0.01	0.03	0.05	0.23	0.02	0.09	--	--	**0.08**	**0.35**
Ethylbenzene	2.83E-04	1.24E-03	2.17E-03	0.01	7.38E-04	3.23E-03	--	--	**3.20E-03**	**0.01**
Xylenes	3.75E-04	1.64E-03	2.79E-03	0.01	4.62E-04	2.02E-03	--	--	**3.63E-03**	**0.02**
Cumene	--	--	--	--	--	--	--	--	**--**	**--**
n-Hexane	1.32E-07	5.78E-07	1.42E-04	6.24E-04	3.28E-23	1.44E-22	--	--	**1.43E-04**	**6.24E-04**
2,2,4 Trimethylpentane	--	--	--	--	--	--	--	--	**--**	**--**

Emissions were calculated as follows:

(NOx or CO Emissions, lb/hr) = (Emission Factor, lb/MMBtu) x (Flow rate, scf/hr) x (Heat Value, Btu/scf) / (1,000,000 Btu/MMBtu)

(NOx or CO Emissions, tpy) = (Emission Factor, lb/MMBtu) x (Flow rate, scf/yr) x (Heat Value, Btu/scf) / (1,000,000 Btu/MMBtu) / (2,000 lb/ton)

(SO_2 emissions, lb/hr or tpy) = (Uncontrolled H_2S rate, lb/hr or tpy) x (Molecular Weight of SO_2, 64.06 lb/lb-mole) / (Molecular Weight of H_2S, 34.08 lb/lb-mole)

(VOC or H_2S emissions, lb/hr or tpy) = (Uncontrolled VOC or H_2S rate, lb/hr or tpy) x (1 - DRE, %)

Targa Midstream Services, LLC, Copperhead Gas Plant
STORAGE TANK EMISSION TOTALS

VOC Emissions

UNIT ID.	Tank Description	Annual Throughput (gal/yr)	Breathing Losses[1] (lb/yr)	Working Losses[1] (lb/yr)	Flash Losses[1] (lb/yr)	Total Losses (lb/yr)	Uncontrolled Annual VOC Emissions (tpy)	Uncontrolled Annual H_2S Emissions (tpy)	Uncontrolled Annual HAP emissions (tpy)	Control Efficiency[2] (%)	Controlled Annual VOC Emissions (tpy)	Controlled Annual H_2S emissions (tpy)	Controlled Annual HAP emissions (tpy)
Tank-1	Condensate Tank	709,624	1,396.46		15,040.78	16,437.24	8.22	0.006	0.23	98%	0.16	0.0001	0.005
Tank-2	Condensate Tank	709,624	1,396.46		15,040.78	16,437.24	8.22	0.006	0.23	98%	0.16	0.0001	0.005
Tank-3	Produced Water Tank	412,374	62.44		39.54	101.98	0.05	0.003	0.02	0.0%	0.05	0.003	0.02
Tank-4	Produced Water Tank	412,374	62.44		39.54	101.98	0.05	0.0031	0.0158	0.0%	0.05	0.0031	0.0158
Tank-5	New H2S Scavenger Tank	575,000	700.87		-	700.87	0.35	-	0.350	0.0%	0.35	-	0.35
Tank-6	Spent H2S Scavenger Tank	575,000	700.87		-	700.87	0.35	-	0.350	0.0%	0.35	-	0.35
TK-1907-CHP	Produced Water Tank	8,657,924	10,586.81		94,799.13	105,385.94	52.69	15.041	44.67	98%	1.05	0.30	0.89
TK-1908-CHP	Produced Water Tank	8,657,924	10,586.81		94,799.13	105,385.94	52.69	15.041	44.67	98%	1.05	0.30	0.89
TK-1907-CH2	Produced Water Tank	8,657,924	10,586.81		94,799.13	105,385.94	52.69	15.041	44.67	98%	1.05	0.30	0.89
TK-1908-CH2	Produced Water Tank	8,657,924	10,586.81		94,799.13	105,385.94	52.69	15.041	44.67	98%	1.05	0.30	0.89

[1] Breathing, working, and flash losses for the condensate tanks are calculated ProMax and AP-42

[2] The control efficiency assumes 98% flare control.

Targa Midstream Services, LLC, Copperhead Gas Plant
STORAGE TANK LIST

EPN	ID	Tank Description	Tank Size	Tank Type	Tank Height (ft)	Diameter (ft)	Tank Throughput (bbl/day)	VOC Emissions (tpy)
Tank-1	Tank-1	Condensate Tank	400 bbl	Vertical Fixed Roof	20	12	46.3	0.16
Tank-2	Tank-2	Condensate Tank	400 bbl	Vertical Fixed Roof	20	12	46.3	0.16
Tank-3	Tank-3	Produced Water Tank	400 bbl	Vertical Fixed Roof	20	12	27	0.05
Tank-4	Tank-4	Produced Water Tank	400 bbl	Vertical Fixed Roof	20	12	27	0.05
Tank-5	Tank-5	New H2S Scavenger Tank	500 bbl	Vertical Fixed Roof	16	15.5	38	0.35
Tank-6	Tank-6	Spent H2S Scavenger Tank	500 bbl	Vertical Fixed Roof	16	15.5	38	0.35
Tank-7	Tank-7	Lube Oil	TBD	TBD	exempt per 20.2.72.202.B(2)			
Tank-8	Tank-8	Lube Oil	TBD	TBD				
Tank-9	Tank-9	TEG Tank	TBD	TBD				
Tank-10	Tank-10	Methanol Tote	500 gal	Tote	exempt per 20.2.72.202.B(5)			
TK-1901-CHP	TK-1901-CHP	LUBE OIL DRAIN SUMP	-	TBD	exempt per 20.2.72.202.B(2)			
TK-1902-CHP	TK-1902-CHP	OPEN DRAIN SUMP	-	TBD				
TK-1903-CHP	TK-1903-CHP	USED LUBE OIL TANK	210 BBL	Vertical Fixed Roof				
TK-1904-CHP	TK-1904-CHP	NEW LUBE OIL TANK	210 BBL	Vertical Fixed Roof				
TK-1905-CHP	TK-1905-CHP	OPEN DRAIN STORAGE TANK	400 BBL	Vertical Fixed Roof				
TK-1906-CHP	TK-1906-CHP	REFRIGERATION LUBE OIL TANK	1000 GAL	TBD				
TK-1907-CHP	TK-1907-CHP	Produced Water Tank	500 BBL	Vertical Fixed Roof	25	12	23720	1.05
TK-1908-CHP	TK-1908-CHP	Produced Water Tank	500 BBL	Vertical Fixed Roof	25	12	23720	1.05
TK-1909-CHP	TK-1909-CHP	LEAN AMINE TANK	400 BBL	Vertical Fixed Roof	exempt per 20.2.72.202.B(2)			
TK-1910-CHP	TK-1910-CHP	WATER MAKEUP TANK	1000 BBL	Vertical Fixed Roof				
TK-1911-CHP	TK-1911-CHP	TEG TANK	210 BBL	Vertical Fixed Roof				
TK-1917-CHP	TK-1917-CHP	NEW LUBE OIL TANK (ACID GAS)	210 BBL	Vertical Fixed Roof				
TK-1960-CHP	TK-1960-CHP	LUBE OIL MAKEUP TANK	500 GAL	TBD				
TK-1970-CHP	TK-1970-CHP	CYLINDER OIL TANK	500 GAL	TBD				
TK-1980-CHP	TK-1980-CHP	CYLINDER OIL TANK	500 GAL	TBD				
TK-2901-CHP	TK-2901-CHP	AMINE SUMP	-	TBD				
TK-3901-CHP	TK-3901-CHP	GLYCOL SUMP	-	TBD				
TK-3920-CHP	TK-3920-CHP	JW SURGE TANK	-	TBD				
TK-3921-CHP	TK-3921-CHP	LUBE OIL MAKEUP TANK	300 GAL	TBD				
TK-3930-CHP	TK-3930-CHP	JW SURGE TANK	-	TBD				
TK-6900-CHP	TK-6900-CHP	ACID GAS CYLINDER LUBE OIL TANK	1000 GAL	TBD				
TK-6901-CHP	TK-6901-CHP	Methanol Tank	500 GAL	Vertical Fixed Roof	3.8	6	0.274	1.5
TK-1901-CH2	TK-1901-CH2	LUBE OIL DRAIN SUMP	-	TBD	exempt per 20.2.72.202.B(2)			
TK-1902-CH2	TK-1902-CH2	OPEN DRAIN SUMP	-	TBD				
TK-1903-CH2	TK-1903-CH2	USED LUBE OIL TANK	210 BBL	TBD				
TK-1904-CH2	TK-1904-CH2	NEW LUBE OIL TANK	210 BBL	TBD				
TK-1905-CH2	TK-1905-CH2	OPEN DRAIN STORAGE TANK	400 BBL	TBD				
TK-1906-CH2	TK-1906-CH2	REFRIGERATION LUBE OIL TANK	1000 GAL	TBD				
TK-1907-CH2	TK-1907-CH2	Produced Water Tank	500 BBL	TBD	25	12	23720	1.05
TK-1908-CH2	TK-1908-CH2	Produced Water Tank	500 BBL	TBD	25	12	23720	1.05
TK-1909-CH2	TK-1909-CH2	LEAN AMINE TANK	400 BBL	TBD	exempt per 20.2.72.202.B(2)			
TK-1910-CH2	TK-1910-CH2	WATER MAKEUP TANK	1000 BBL	TBD				
TK-1911-CH2	TK-1911-CH2	TEG TANK	210 BBL	TBD				
TK-1917-CH2	TK-1917-CH2	NEW LUBE OIL TANK (ACID GAS)	210 BBL	TBD				
TK-1960-CH2	TK-1960-CH2	LUBE OIL MAKEUP TANK	500 GAL	TBD				
TK-1970-CH2	TK-1970-CH2	CYLINDER OIL TANK	500 GAL	TBD				
TK-1980-CH2	TK-1980-CH2	CYLINDER OIL TANK	500 GAL	TBD				
TK-2901-CH2	TK-2901-CH2	AMINE SUMP	-	TBD				
TK-3901-CH2	TK-3920-CH2	GLYCOL SUMP	-	TBD				
TK-3920-CH2	TK-3921-CH2	JW SURGE TANK	-	TBD				
TK-3921-CH2	TK-3930-CH2	LUBE OIL MAKEUP TANK	300 GAL	TBD				
TK-3930-CH2	TK-6900-CH2	JW SURGE TANK	-	TBD				
TK-6900-CH2	TK-6901-CH2	ACID GAS CYLINDER LUBE OIL TANK	1000 GAL	TBD				
TK-6901-CH2	TK-6901-CH2	Methanol Tank	500 GAL	Vertical Fixed Roof	3.8	6	0.274	1.5

TARGA

Targa Midstream Services, LLC, Copperhead Gas Plant
CONDENSATE LOADING EMISSIONS

Promax Loading Losses

Equation[1]:

$$L_L = 12.46 * \frac{SPM}{T}$$

Variables[1]:

L_L - Loading Loss (lbs/1000 gal loaded)
S - Saturation Factor (From Table 5.2-1 of AP-42, Section 5.2)
P - True Vapor Pressure of Loaded Liquid (psia)
M - Molecular Weight of Vapor (lb/lb mol)
T- Temperature of Bulk Liquid (°R = [°F + 460])

VOC Emissions

EPN	Loading Method	S[2]	P_{max}[3] (psia)	M[3] (lb/lbmol)	T[3] (°R)	L_L (lbs/1000 gal)	Max Hourly Throughput[4] (gal/hr)	VOC Content[5] (wt %)	% Control	Max Hourly Emissions (lb/hr)
LOAD-1	Submerged	0.60	13.34	85.88	554.67	15.44	7,560	99.82	0.0	116.55

EPN	Loading Method	S[2]	P_{max} (psia)	M (lb/lbmol)	T (°R)	L_L (lbs/1000 gal)	Annual Throughput (gal/yr)	VOC Content[5] (wt %)	% Control	Annual Emissions (tpy)
LOAD-1	Submerged	0.60	13.3430	85.88	534.67	16.02	1,419,247.83	99.82	0.0	11.35

[1] Loading Loss Equation and Variables are from AP-42, Section 5.2, Transportation and Marketing of Petroleum Liquids.
[2] The S-factor is based on submerged loading in dedicated normal service
[3] Vapor pressure and molecular weight obtained from ProMax storage tank simulations. The maximum true vapor pressure is used to calculate the hourly emission rate and is based on maximum temperature of 95°F and 75°F.
[4] The maximum hourly throughput is based on the capability of the tank truck to load liquids in one hour's time.
[5] The hourly and annual VOC content was derived from the ProMax Simulation

Pollutant	Uncontrolled Loadout Emission	
	lb/hr	tpy
H2S	0.001	*0.0001*
Benzene	3.09	0.3009
Toluene	5.86	0.5709
Ethylbenzene	0.71	0.0694
Xylene (m)	2.53	0.2461
n-Hexane	9.10	0.8862
TOTAL HAPs	21.29	***2.07***

Targa Midstream Services, LLC, Copperhead Gas Plant
PRODUCED WATER LOADING EMISSIONS

Promax Loading Losses

Equation[1]:

$$L_L = 12.46 * \frac{SPM}{T}$$

Variables[1]:

L_L - Loading Loss (lbs/1000 gal loaded)
S - Saturation Factor (From Table 5.2-1 of AP-42, Section 5.2)
P - True Vapor Pressure of Loaded Liquid (psia)
M - Molecular Weight of Vapor (lb/lb mol)
T- Temperature of Bulk Liquid (°R = [°F + 460])

VOC Emissions

EPN	S^2	P_{max}[3] (psia)	M^3 (lb/lbmol)	T^3 (°R)	L_L (lbs/1000 gal)	Max Hourly Throughput[4] (gal/hr)	VOC Content[5] (wt %)	% Control[5]	Max Hourly Emissions (lb/hr)
LOAD-2	0.60	13.34	18.02	554.67	3.24	7,560	0.01	0	0.003

EPN	S^2	P_{max} (psia)	M (lb/lbmol)	T (°R)	L_L (lbs/1000 gal)	Annual Throughput (gal/yr)	VOC Content[5] (wt %)	% Control[5]	Annual Emissions (tpy)
LOAD-2	0.60	13.34	18.02	534.67	3.36	34,631,696	0.01	0	0.0070

[1] Loading Loss Equation and Variables are from AP-42, Section 5.2, Transportation and Marketing of Petroleum Liquids.
[2] The S-factor is based on submerged loading in dedicated normal service
[3] Vapor pressure and molecular weight obtained from ProMax storage tank simulations. The maximum true vapor pressure is used to calculate the hourly emission rate and is based on maximum temperature of 95°F and 75°F.
[4] The maximum hourly throughput is based on the capability of the tank truck to load liquids in one hour's time.
[5] VOC weight % determined via Promax

Pollutants	Uncontrolled Loadout Emission tpy
H2S	0.0000
Benzene	0.0000
Toluene	0.0000
Ethylbenzene	0.0000
Xylene (m)	0.0000
n-Hexane	0.0000
TOTAL HAPs	***2.73E-06***

[1] Loadout HAPs (tpy) =Tank-3 HAP Working and Breathing *(total loadout VOC/ Tank-3 working and breathing losses)

Targa Midstream Services, LLC, Copperhead Gas Plant

Compressor Station Produced Water Loading Emissions

Promax Loading Losses

Equation[1]:

$$L_L = 12.46 * \frac{SPM}{T}$$

Variables[1]:

L_L - Loading Loss (lbs/1000 gal loaded)
S - Saturation Factor (From Table 5.2-1 of AP-42, Section 5.2)
P - True Vapor Pressure of Loaded Liquid (psia)
M - Molecular Weight of Vapor (lb/lb mol)
T- Temperature of Bulk Liquid (°R = [°F + 460])

VOC Emissions

EPN	Loading Method	S[2]	P_{max}[3] (psia)	M[3] (lb/lbmol)	T[3] (°R)	L_L (lbs/1000 gal)	Max Hourly Throughput[4] (gal/hr)	VOC Content[5] (wt %)	% Control	Max Hourly Emissions (lb/hr)
LOAD-1	Submerged	0.60	13.34	19.48	554.67	3.50	7,560	9.48	0.0	2.51

EPN	Loading Method	S[2]	P_{max} (psia)	M (lb/lbmol)	T (°R)	L_L (lbs/1000 gal)	Annual Throughput (gal/yr)	VOC Content[5] (wt %)	% Control	Annual Emissions (tpy)
LOAD-1	Submerged	0.60	13.3400	19.48	534.67	3.63	824,747.94	9.48	0.0	0.14

[1] Loading Loss Equation and Variables are from AP-42, Section 5.2, Transportation and Marketing of Petroleum Liquids.
[2] The S-factor is based on submerged loading in dedicated normal service
[3] Vapor pressure and molecular weight obtained from ProMax storage tank simulations. The maximum true vapor pressure is used to calculate the hourly emission rate and is based on maximum temperature of 95°F and 75°F.
[4] The maximum hourly throughput is based on the capability of the tank truck to load liquids in one hour's time.
[5] The hourly and annual VOC content was derived from the ProMax Simulation

Pollutant	Uncontrolled Loadout Emission	
	lb/hr	tpy
H2S	0.00020	*0.00001*
Benzene	0.06	0.0036
Toluene	0.08	0.0046
Ethylbenzene	0.00	0.0003
Xylene (m)	0.02	0.0009
n-Hexane	0.00	0.0002
TOTAL HAPs	0.17	***0.01***

Targa Midstream Services, LLC, Copperhead Gas Plant
Pressurized Loading

Equation:

$$L_L = \frac{(P+14.7)*(V_{Hose})*MW}{14.7*(359\ scf/lb\text{-}mol)}$$

Variables:

L_L - Loading Loss (lbs)
P - Pressure of Tank (psig)
V_{Hose} - Volume of Hose (ft^3) = $pi*D^2*L/4$
MW - Molecular Weight of Vapor (lb/lb mol)

EPN	Material Loaded	Loading Method	L (ft)	D (ft)	P (psig)	MW (lb/lb-mol)	L_L (lbs)	Max Loads per Hour	Max Hourly Emissions (lb/hr)
L-P	Condensate	Pressurized	15.0	0.3	45	65.32	0.544	1	0.5441

EPN	Material Loaded	Loading Method	L (ft)	D (ft)	P (psig)	MW (lb/lb-mol)	L_L (lbs)	Loads per Year	Annual Emissions (tpy)
L-P	Condensate	Pressurized	15.0	0.3	45	65.32	0.544	200	0.0544

Notes:
Loading losses from pressurized loading occur when the line between the pressurized tank and tank-truck is disconnected.

Speciated Emissions

Pollutant	Pressurized Condensate Composition[1]		Total Condensate Loading Emissions	
	Hourly Wt %	Annual Wt %	lb/hr	tpy
Total	--	--	**0.5441**	**0.0544**
H_2S[2]	0.6323	0.0010	0.0060	0.0000
Propane	12.6632	12.6632	0.1199	0.0120
i-Butane	3.6438	3.6438	0.0345	0.0034
n-Butane	12.2174	12.2174	0.1156	0.0116
i-Pentane	6.2790	6.2790	0.0594	0.0059
n-Pentane	7.9821	7.9821	0.0755	0.0076
Cyclohexane	0.0000	0.0000	0.0000	0.0000
Other C6	0.0000	0.0000	0.0000	0.0000
Heptanes	11.1774	11.1774	0.1058	0.0106
Octanes	2.9807	2.9807	0.0282	0.0028
Nonanes	0.5383	0.5383	0.0051	0.0005
Decanes +	0.0073	0.0073	0.0001	0.0000
Benzene	0.0000	0.0000	0.0000	0.0000
Toluene	0.0000	0.0000	0.0000	0.0000
Ethylbenzene	0.0000	0.0000	0.0000	0.0000
Xylenes	0.0000	0.0000	0.0000	0.0000
Cumene	0.0000	0.0000	0.0000	0.0000
n-Hexane	0.0000	0.0000	0.0000	0.0000
2,2,4 Trimethylpentane	0.0000	0.0000	0.0000	0.0000
Total	**58.1214**	**57.4902**	**0.5501**	**0.0544**
Total VOC	**57.4892**	**57.4892**	**0.5441**	**0.0544**
Total HAP	**0.0000**	**0.0000**	**0.0000**	**0.0000**

[1]The composition used is from the pressurized inlet condensate liquid analysis.
[2] This site handles only sweet natural gas and crude oil/condensate. An H_2S content of 10 ppm was assumed based on the sales specification for the oil.

Targa Midstream Services, LLC, Copperhead Gas Plant
HAUL ROAD EMISSIONS

Unit(s): HAUL
Description: Truck haul road emissions

Input Data

Empty vehicle weight[1]	16	tons
Load weight[2]	21.5	tons
Loaded vehicle[3]	37.5	tons
Mean vehicle weight[4]	26.8	tons
Vehicle frequency	1.0	trips/hour
Round-trip distance	0.20	mile/trip
Operating hours	8760	hours/yr
Surface silt content[5]	4.8	%
Annual wet days[6]	70	days/yr
Vehicle miles traveled[7]	0.2	mile/hr
Control percentage	0%	nominal, base course chemical treatment

Emission Factors and Constants

Parameter	PM_{30}	PM_{10}	$PM_{2.5}$
k, lb/VMT[8]	4.9	1.5	0.15
a, lb/VMT[8]	0.70	0.90	0.90
b, lb/VMT[8]	0.45	0.45	0.45
Hourly EF, lb/VMT[9]	6.91	1.76	0.18
Annual EF, lb/VMT[10]	5.58	1.42	0.14

Uncontrolled Emissions

PM_{30}	PM_{10}	$PM_{2.5}$	
1.38	0.35	0.035	lb/hr[11]
0.12	0.03	0.003	ton/yr[12]

Notes

[1] Empty vehicle weight includes driver and occupants and full fuel load.
[2] Cargo, transported materials, etc. (5.7 lb/gal RVP5 *7560 gal truck/ 2000lb/ton)
[3] Loaded vehicle weight = Empty + Load Size
[4] Mean Vehicle weight = (Loaded Weight + Empty Weight) / 2
[5] AP-42 Table 13.2.2-1, Sand and gravel processing
[6] AP-42 Figure 13.2.2-1
[7] VMT/hr = Vehicle Miles Traveled per hour = Trips per hour * Segment Length
[8] Table 13.2.2-2, Industrial Roads
[9] AP-42 13.2.2, Equation 1a
[10] AP-42 13.2.2, Equation 2
[11] lb/hr = Hourly EF (lb/VMT) * VMT (mile/hr)
[12] ton/yr = Annual EF (lb/VMT) * Truck/day * Mile/truck * 365day/yr * 1ton/2000lb
[13] Uncontrolled emissions * (1 - Control%)

- Are there any truck loading operations at the facility?
    - Yes Liquid will be trucked out of the facility
    - Condensate (2) 400 bbl tanks
    - Slope oil and water (1) 210 bbl tanks
- Will the facility have a haul road on site or will tanks loadout from outside of the fence line? If there is a haul road onsite, then what will be the distance of the road?
    - Trucks go into facility. Circle route.
    - 400 foot from road to the site gate and the trucks will have a circular drive inside the facility to get to the loading rack without backing.

Table 13.2.2-1. TYPICAL SILT CONTENT VALUES OF SURFACE MATERIAL ON INDUSTRIAL UNPAVED ROADS[a]

Industry	Road Use Or Surface Material	Plant Sites	No. Of Samples	Silt Content (%)	
				Range	Mean
Copper smelting	Plant road	1	3	16 - 19	17
Iron and steel production	Plant road	19	135	0.2 - 19	6.0
Sand and gravel processing	Plant road	1	3	4.1 - 6.0	4.8
	Material storage area	1	1	-	7.1
Stone quarrying and processing	Plant road	2	10	2.4 - 16	10
	Haul road to/from pit	4	20	5.0-15	8.3
Taconite mining and processing	Service road	1	8	2.4 - 7.1	4.3
	Haul road to/from pit	1	12	3.9 - 9.7	5.8
Western surface coal mining	Haul road to/from pit	3	21	2.8 - 18	8.4

Capstone G65 Microturbines

Emission Unit: E-1
Source Description: Natural Gas-Fired Microturbine
EXEMPT: This unit is exempt pursuant to NMAC 20.72.202.B(5)
Annual operating hours: 8,760

Parameters	Value	Unit	Note
Maximum Power Rating	65	kW	Manufacturer data
Maximum Horsepower	87.17	hp	Calculated
Total Mass Flow of Exhaust	1.08	lb/s	Manufacturer data
Fuel Heating Value	1,020	Btu/scf	Nominal
Fuel Usage	842,000	BTU/hr	Manufacturer data
Engine BSFC	9,660	BTU/hp-hr	Calculated
Hourly Fuel Usage	0.8255	Mscf/hr	Calculated
Annual Fuel Usage	7.231	MMscf/yr	Calculated
Heat Input	0.84	MMBtu/hr	Calculated

Emissions per Unit

	NOx	CO	VOC	SO_2[1]	PM^2	Total HAP	Formaldehyde	Acetaldehdye	Acrolein	Benzene	Ethylbenzene	Toluene	Xylene	Naphthalene	PAH	Propolyne Oxide	1,3-Butadiene	CO_2	CH_4	N_2O	CO_2e [4]	Unit	Note
	0.16	0.42	0.034																			g/hp-hr	Manufacturer data
Emission Factors					0.0066		7.10E-04	4.00E-05	6.40E-06	1.20E-05	3.20E-05	1.30E-04	6.40E-05	1.30E-06	2.20E-06	2.90E-05	4.30E-07					lb/MMBtu	AP-42 Table 3.1-2a and Table 3.1-3
					0.0066		7.10E-04	4.00E-05	6.40E-06	1.20E-05	3.20E-05	1.30E-04	6.40E-05	1.30E-06	2.20E-06	2.90E-05	4.30E-07					lb/MMBtu	EF adjusted based on fuel heat value[4]
																		53.02	0.001	1.0E-04		kg/MMBtu	Table C-1 and C-2 of 40 CFR Part 98
																		116.64	0.0022	2.2E-04		lb/MMBtu	
Emission Rates	***0.031***	***0.081***	***0.0065***	***0.0037***	***0.0056***	***8.37E-04***	***5.98E-04***	***3.37E-05***	***5.39E-06***	***1.01E-05***	***2.69E-05***	***1.09E-04***	***5.39E-05***	***1.09E-06***	***1.85E-06***	***2.44E-05***	***3.62E-07***	***98.2***	***0.0019***	***1.9E-04***	***98.3***	***lb/hr***	
	0.13	***0.35***	***0.029***	***0.016***	***0.024***	***0.0037***	***2.62E-03***	***1.48E-04***	***2.36E-05***	***4.43E-05***	***1.18E-04***	***4.79E-04***	***2.36E-04***	***4.79E-06***	***8.11E-06***	***1.07E-04***	***1.59E-06***	***430.2***	***0.0081***	***8.1E-04***	***430.6***	***tpy***	*8760 hrs/yr*

[1] SO_2 emissions based on fuel consumption and fuel sulfur content of 1.57 gr S/Mscf
2 gr S/Mscf * fuel scf/hr * 1 lb/7000 gr * 64 lb SO_2/ 32 lb S = lb/hr SO_2

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

[3] AP42 natural gas heat value is: 1,020 Btu/scf

[4] Global Warming Potentials (GWP) are from Table A-1 of the EPA GHG MRR under 40 CFR Part 98.
CH_4 GWP = 25
N_2O GWP = 298

Exhaust Parameters

Parameters	Value	Unit	Note
Exhaust temp	588	°F	Manufacturer data
Stack height		ft	Engineering Estimate
Stack diameter		ft	Engineering Estimate
Exhaust flow (Actual)	0	acfm	*Flow (acfm) = Flow (scfm) * (Stack Temp + 460) / 528 * 29.92 / Site Bar. Pres. / (100% - Moisture%)*
Exhaust velocity		ft/sec	Exhaust flow / stack area
O_2 F factor	8,710	dscf/MMBtu	Method 9
Moisture	10	%	nominal
Exhaust flow (Dry)	0.0	dscfm	= heat input * O2 F * [20.9 / (20.9 - O2%)]
O_2 %	10	%	
Site Elevation		ft MSL	
Pressure at Elevation	29.92	in Hg	

Compressor Blowdowns

Compressor Name	Quantity of Compressors (#)	Quantity of Compressors Simultaneously (#)	Total Volume (scf/event)	Hours / Blowdown (hr/event)	Number of Events/Unit Type
Electrics	33	6	5385.0	1	1716

[1] Blowdown volumes provided by Targa.

Filter Coalescer Blowdowns

Input Data	Value	Units
Volume of gas per blowdown	50	scf/event
Number of Filter Coalescers	1	Units
Number of Blowdowns per unit per year	2	events/yr
Duration of Event	1	hr/event
Simultaneous unit blowdowns	1	Units

Scrubbers

Input Data	Value	Units
Volume of Gas Per Blowdown	100	scf/event
Number of Scrubbers	30	Units
Number of Blowdowns per unit per year	1	events/yr
Duration of Event	1	hr/event
Simultaneous unit blowdowns	5	Units

Tank Maintenance

Input Data	Value	Units
Number of tanks	4	Units
Molecular Weight of Vapors	45.67	lb/lb-mol
Duration of tank purging/degassing	24	hr/event
Volume of gas released during degassing event	1696.50	scf/event
Tank Height	15	ft
Tank Diameter	12	ft
Number of tank purging/degassing events per tank per year	1	event/yr
Simultaneous tank degassing	1	Units

Pigging

Input Data	Value	Units
Unit #1 Volume Vented	2305.452	scf/event
Unit #2 Volume Vented	2305.452	scf/event
Unit #3 Volume Vented	2305.452	scf/event
Unit #4 Volume Vented	2305.452	scf/event
Unit #4 Volume Vented	2305.452	scf/event
Unit #6 Volume Vented	2305.452	scf/event
Maximum hourly number of pigging events	1	events/hr
Unit #1 Annual Number of Events	156	events/yr
Unit #2 Annual Number of Events	156	events/yr
Unit #3 Annual Number of Events	156	events/yr
Unit #4 Annual Number of Events	156	events/yr
Unit #5 Annual Number of Events	156	events/yr
Unit #6 Annual Number of Events	156	events/yr
Actual Pressure	1000	psig
Maximum Temperatue	100	°F
Annual Temperature	80	°F
Simultaneous pigging lines	1	N/A

Pipeline Maintenance - Only if pipeline is opened and a segment is vented

Input Data	Value	Units
Pipeline Diameter	12	inches
Pipeline Length	10000	ft
Duration of Event	2	hr/event
Maintenance events per year	2	events/yr
Actual Pressure	80	psia
Maximum Temperature	100	°F
Annual Temperature	80	°F
Simultaneous pipeline maintenance	1	N/A
Pipeline volume vented	39699	scf/event

Surface Coating

Input Data	Value	Units
Maximum amount of paint used in an hour	25	gal/hr
Maximum amount of paint used in a year	100	gal/yr
Source Painted	Tank	N/A
Typical paint/coating material	Acrylon or Macropoxy	N/A
Application method	Airless	N/A

Abrasive Blasting

Input Data	Value	Units
Blasting Material	Sand	N/A
Usage per Event	3100	lb/event
Events per year	1	events/yr
Duration of event	6	hr/event

Pump Blowdowns

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

Description	NO_x		CO		VOC		PM		PM_{10}		$PM_{2.5}$		SO_2		H_2S		Total 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)
Compressor Station																		
Pigging and Purging Emissions	-	-	-	-	2.72	0.84	-	-	-	-	-	-	-	-	0.01	3.09E-03	0.05	0.01
Pipeline Maintenance Emissions	-	-	-	-	0.00	9.51E-04	-	-	-	-	-	-	-	-	0.00	2.60E-06	0.00	1.59E-05
Dehy Blowdown Emissions	-	-	-	-	0.28	5.55E-04	-	-	-	-	-	-	-	-	0.00	1.52E-06	0.00	9.25E-06
Vessel Blowdown Emissions	-	-	-	-	12.92	6.46E-03	-	-	-	-	-	-	-	-	0.001	2.74E-07	0.22	1.08E-04
Gas Plant																		
Compressor Blowdowns[1]	-	-	-	-	259.29	10.501	-	-	-	-	-	-	-	-	0.02	<0.01	--	--
Coalescer Blowdowns	-	-	-	-	0.94	<0.001	-	-	-	-	-	-	-	-	<0.01	<0.01	--	--
Scrubber Blowdown	-	-	-	-	0.94	<0.01	-	-	-	-	-	-	-	-	<0.01	<0.01	--	--
Pipeline Blowdowns	-	-	-	-	745.90	0.37	-	-	-	-	-	-	-	-	0.02	<0.01	--	--
Pump Blowdowns	-	-	-	-	5.11	<0.01	-	-	-	-	-	-	-	-	<0.01	<0.01	--	--
Pigging	-	-	-	-	0.45	0.21	-	-	-	-	-	-	-	-	<0.01	<0.01	--	--
Surface Coating	-	-	-	-	73.00	0.15	0.77	<0.01	0.07	<0.01	0.01	<0.01	-	-	-	-	13.39	0.03
Abrasive Blasting	-	-	-	-	-	-	47.02	0.14	6.72	0.02	0.67	<0.01	-	-	-	-	-	-
Tank Degassing	-	-	-	-	25.44	1.36	-	-	-	-	-	-	-	-	0.01	<0.01	6.36	0.34
TOTAL	**--**	**--**	**--**	**--**	**1,126.99**	**13.44**	**47.79**	**0.14**	**6.79**	**0.02**	**0.68**	**<0.01**	**--**	**--**	**0.05**	**<0.01**	**20.01**	**0.38**

1. Compressor Blowdowns include those that occur at the compressor station



Targa Midstream Services, LLC, Copperhead Gas Plant
PIGGING AND PURGING EMISSIONS CALCULATIONS

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

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

Maximum Uncontrolled Annual Emissions for each Unit (tpy) = [Volume of gas in pipe (scf/event)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] x [frequency of events (events/yr)] / [379.5 (scf/lb-mol)] / [2,000 (lb/ton)]

For sites with multiple units, the total annual emissions are calculated by summing emissions for all units. It is assumed only one unit can be pigged/purged in one hour; therefore, the maximum volume of the units is used for the hourly calculations.

Pigging and Purging Emissions

Unit #1 - Volume Vented =	136	scf/event
Unit #2 - Volume Vented =	196	scf/event
Maximum Number of Hourly Pigging/Purging Events =	1	events/hr
Unit #1 - Annual Number of Events =	365	events/yr
Unit #2 - Annual Number of Events =	365	events/yr
Pipelines Purged Simultaneously =	1	line
Molecular Weight of Stream =	22.19	lb/lb-mol
Control Type =	None	

Compound	Composition (wt %)	Maximum Uncontrolled Hourly Emissions (lb/hr)	Maximum Uncontrolled Annual Emissions (tpy)
H2S	8.71E-04	9.99E-03	3.09E-03
Nitrogen	0.02	0.26	0.08
Methane	0.53	6.04	1.87
Carbon Dioxide	0.05	0.53	0.16
Ethane	0.15	1.77	0.55
Propane	0.12	1.40	0.43
i-Butane	0.02	0.24	0.08
n-Butane	0.05	0.57	0.18
i-Pentane	0.01	0.15	0.05
n-Pentane	0.01	0.15	0.05
Neohexane	1.11E-04	1.27E-03	3.93E-04
Cyclopentane	1.00E-03	0.01	3.55E-03
2-Methylpentane	2.40E-03	0.03	8.49E-03
3-Methylpentane	1.32E-03	0.02	4.66E-03
n-Hexane	2.52E-03	0.03	8.93E-03
Methylcyclopentane	1.28E-03	0.01	4.55E-03
Benzene	8.76E-04	0.01	3.10E-03
Cyclohexane	1.59E-03	0.02	5.62E-03
2-Methylhexane	3.04E-04	3.48E-03	1.08E-03
3-Methylhexane	4.47E-04	5.12E-03	1.58E-03
Heptanes	3.87E-04	4.44E-03	1.37E-03
Methylcyclohexane	8.21E-04	9.42E-03	2.91E-03
Toluene	4.58E-04	5.25E-03	1.62E-03
2-Methylheptane	1.52E-04	1.74E-03	5.38E-04
3-Methylheptane	2.13E-05	2.44E-04	7.55E-05
Octanes	6.88E-05	7.89E-04	2.44E-04
Ethylbenzene	1.68E-05	1.93E-04	5.96E-05
p-Xylene	2.23E-05	2.56E-04	7.91E-05
o-Xylene	1.00E-05	1.15E-04	3.56E-05
Nonanes	5.26E-05	6.03E-04	1.86E-04
Decanes	7.59E-06	8.70E-05	2.69E-05
Undecane	--	--	--
Total VOC	**0.23**	**2.68**	**0.83**
H_2S	**8.71E-04**	**9.99E-03**	**3.09E-03**
Total HAP	**3.90E-03**	**0.04**	**0.01**

TARGA

Targa Midstream Services, LLC, Copperhead Gas Plant
PIPELINE MAINTENANCE EMISSIONS CALCULATIONS

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

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

Maximum Uncontrolled Annual Emissions for each Unit (tpy) = [Volume of gas in pipe (scf/event)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] x [frequency of events (events/yr)] / [379.5 (scf/lb-mol)] / [2,000 (lb/ton)]

Pipeline Maintenance Emissions

Pipeline Volume Vented =	137.23	scf/event
Maximum Number of Hourly Maintenance Events =	0.00	events/hr
Annual Number of Events =	1.00	events/yr
Pipelines Purged Simultaneously =	1.00	lines
Molecular Weight of Stream =	23	lb/lb-mol
Control Type =	None	

Compound	Composition (wt %)	Maximum Uncontrolled Hourly Emissions (lb/hr)	Maximum Uncontrolled Annual Emissions (tpy)
H2S	0.02	--	6.15E-05
Nitrogen	0.02	--	9.25E-05
Methane	0.53	--	2.14E-03
Carbon Dioxide	0.05	--	1.88E-04
Ethane	0.15	--	6.29E-04
Propane	0.12	--	4.98E-04
i-Butane	0.02	--	8.65E-05
n-Butane	0.05	--	2.03E-04
i-Pentane	0.01	--	5.44E-05
n-Pentane	0.01	--	5.30E-05
Neohexane	1.11E-04	--	4.51E-07
Cyclopentane	1.00E-03	--	4.08E-06
2-Methylpentane	2.40E-03	--	9.75E-06
3-Methylpentane	1.32E-03	--	5.36E-06
n-Hexane	2.52E-03	--	1.02E-05
Methylcyclopentane	1.28E-03	--	5.22E-06
Benzene	8.76E-04	--	3.56E-06
Cyclohexane	1.59E-03	--	6.45E-06
2-Methylhexane	3.04E-04	--	1.24E-06
3-Methylhexane	4.47E-04	--	1.82E-06
Heptanes	3.87E-04	--	1.58E-06
Methylcyclohexane	8.21E-04	--	3.34E-06
Toluene	4.58E-04	--	1.86E-06
2-Methylheptane	1.52E-04	--	6.17E-07
3-Methylheptane	2.13E-05	--	8.66E-08
Octanes	6.88E-05	--	2.80E-07
Ethylbenzene	1.68E-05	--	6.84E-08
p-Xylene	2.23E-05	--	9.08E-08
o-Xylene	1.00E-05	--	4.08E-08
Nonanes	5.26E-05	--	2.14E-07
Decanes	7.59E-06	--	3.09E-08
Undecane	--	--	--
TOTAL VOC	**0.23**	**--**	**9.51E-04**
H_2S	**0.02**	**--**	**6.15E-05**
TOTAL HAPs	**3.90E-03**	**--**	**1.59E-05**

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

Targa Midstream Services, LLC, Copperhead Gas Plant
DEHYDRATOR BLOWDOWN EMISSIONS CALCULATIONS

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

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

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

Total Volume of blowdown accounts for volume from the vessel, process skid, and extension skids, as

Dehy Blowdown Emissions

Vessel Blowdown Volume [1] =	1,000	scf/event
Assumed Blowdown Duration =	1	hrs/event
Site-wide Blowdowns in One Year=	4	events/yr/site
Molecular Weight of Stream =	22	lb/lb-mol
Control Type =	None	

Compound	Composition (wt %)	Maximum Uncontrolled Hourly Emissions (lb/hr)	Maximum Uncontrolled Annual Emissions (tpy)	Control Efficiency (%)	Maximum Controlled Hourly Emissions (lb/hr)	Maximum Controlled Annual Emissions (tpy)
H2S	0.02	0.88	1.77E-03	98%	0.0177	0.0000
Nitrogen	0.02	1.33	2.66E-03	--	--	--
Methane	0.53	30.81	0.06	98%	0.6162	0.0012
Carbon Dioxide	0.05	2.70	5.40E-03	98%	0.0540	0.0001
Ethane	0.15	9.04	0.02	98%	0.1808	0.0004
Propane	0.12	7.16	0.01	98%	0.1431	0.0003
i-Butane	0.02	1.24	2.49E-03	98%	0.0249	0.0000
n-Butane	0.05	2.92	5.84E-03	98%	0.0584	0.0001
i-Pentane	0.01	0.78	1.56E-03	98%	0.0156	0.0000
n-Pentane	0.01	0.76	1.52E-03	98%	0.0152	0.0000
Neohexane	1.11E-04	6.48E-03	1.30E-05	98%	0.0001	0.0000
Cyclopentane	1.00E-03	0.06	1.17E-04	98%	0.0012	0.0000
2-Methylpentane	2.40E-03	0.14	2.80E-04	98%	0.0028	0.0000
3-Methylpentane	1.32E-03	0.08	1.54E-04	98%	0.0015	0.0000
n-Hexane	2.52E-03	0.15	2.95E-04	98%	0.0029	0.0000
Methylcyclopentane	1.28E-03	0.08	1.50E-04	98%	0.0015	0.0000
Benzene	8.76E-04	0.05	1.02E-04	98%	0.0010	0.0000
Cyclohexane	1.59E-03	0.09	1.86E-04	98%	0.0019	0.0000
2-Methylhexane	3.04E-04	0.02	3.56E-05	98%	0.0004	0.0000
3-Methylhexane	4.47E-04	0.03	5.23E-05	98%	0.0005	0.0000
Heptanes	3.87E-04	0.02	4.53E-05	98%	0.0005	0.0000
Methylcyclohexane	8.21E-04	0.05	9.61E-05	98%	0.0010	0.0000
Toluene	4.58E-04	0.03	5.35E-05	98%	0.0005	0.0000
2-Methylheptane	1.52E-04	8.87E-03	1.77E-05	98%	0.0002	0.0000
3-Methylheptane	2.13E-05	1.25E-03	2.49E-06	98%	0.0000	0.0000
Octanes	6.88E-05	4.02E-03	8.05E-06	98%	0.0001	0.0000
Ethylbenzene	1.68E-05	9.83E-04	1.97E-06	98%	0.0000	0.0000
p-Xylene	2.23E-05	1.30E-03	2.61E-06	98%	0.0000	0.0000
o-Xylene	1.00E-05	5.87E-04	1.17E-06	98%	0.0000	0.0000
Nonanes	5.26E-05	3.07E-03	6.15E-06	98%	0.0001	0.0000
Decanes	7.59E-06	4.44E-04	8.88E-07	98%	0.0000	0.0000
Undecane	--	--	--	98%	0.0000	0.0000
TOTAL VOC	**0.23**	**13.68**	**0.03**		**0.27**	**5.47E-04**
H_2S	**0.02**	**0.88**	**1.77E-03**		**1.8E-02**	**3.5E-05**
TOTAL HAPs	**3.90E-03**	**0.23**	**4.56E-04**		**4.56E-03**	**9.13E-06**

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

TARGA

Targa Midstream Services, LLC, Copperhead Gas Plant
VESSEL BLOWDOWN EMISSIONS CALCULATIONS

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

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

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

Total Volume of blowdown accounts for volume from the vessel, process skid, and extension skids, as applicable.

Vessel Blowdown Emissions

Vessel Blowdown Volume [1] =	46,578	scf/event
Assumed Blowdown Duration =	1	hrs/event
Site-wide Blowdowns in One Year=	1	events/yr/site
Molecular Weight of Stream =	22	lb/lb-mol
Control Type =	None	

Compound	Composition (wt %)	Maximum Uncontrolled Hourly Emissions (lb/hr)	Maximum Uncontrolled Annual Emissions (tpy)	Control Efficiency (%)	Maximum Controlled Hourly Emissions (lb/hr)	Maximum Controlled Annual Emissions (tpy)
H2S	0.02	41.16	0.02	98%	0.82	4.12E-04
Nitrogen	0.02	61.95	0.03	--	--	--
Methane	0.53	1435.08	0.72	98%	28.70	1.44E-02
Carbon Dioxide	0.05	125.68	0.06	98%	2.51	1.26E-03
Ethane	0.15	421.16	0.21	98%	8.42	4.21E-03
Propane	0.12	333.31	0.17	98%	6.67	3.33E-03
i-Butane	0.02	57.94	0.03	98%	1.16	5.79E-04
n-Butane	0.05	136.02	0.07	98%	2.72	1.36E-03
i-Pentane	0.01	36.44	0.02	98%	0.7287	3.64E-04
n-Pentane	0.01	35.49	0.02	98%	0.7099	3.55E-04
Neohexane	1.11E-04	0.30	1.51E-04	98%	0.0060	3.02E-06
Cyclopentane	1.00E-03	2.73	1.37E-03	98%	0.0546	2.73E-05
2-Methylpentane	2.40E-03	6.53	3.26E-03	98%	0.1305	6.53E-05
3-Methylpentane	1.32E-03	3.59	1.79E-03	98%	0.0717	3.59E-05
n-Hexane	2.52E-03	6.86	3.43E-03	98%	0.1372	6.86E-05
Methylcyclopentane	1.28E-03	3.50	1.75E-03	98%	0.0700	3.50E-05
Benzene	8.76E-04	2.39	1.19E-03	98%	0.0477	2.39E-05
Cyclohexane	1.59E-03	4.32	2.16E-03	98%	0.0864	4.32E-05
2-Methylhexane	3.04E-04	0.83	4.14E-04	98%	0.0166	8.28E-06
3-Methylhexane	4.47E-04	1.22	6.09E-04	98%	0.0244	1.22E-05
Heptanes	3.87E-04	1.05	5.27E-04	98%	0.0211	1.05E-05
Methylcyclohexane	8.21E-04	2.24	1.12E-03	98%	0.0448	2.24E-05
Toluene	4.58E-04	1.25	6.23E-04	98%	0.0249	1.25E-05
2-Methylheptane	1.52E-04	0.41	2.07E-04	98%	0.0083	4.13E-06
3-Methylheptane	2.13E-05	0.06	2.90E-05	98%	0.0012	5.80E-07
Octanes	6.88E-05	0.19	9.37E-05	98%	0.0037	1.87E-06
Ethylbenzene	1.68E-05	0.05	2.29E-05	98%	0.0009	4.58E-07
p-Xylene	2.23E-05	0.06	3.04E-05	98%	0.0012	6.08E-07
o-Xylene	1.00E-05	0.03	1.37E-05	98%	0.0005	2.73E-07
Nonanes	5.26E-05	0.14	7.16E-05	98%	0.0029	1.43E-06
Decanes	7.59E-06	0.02	1.03E-05	98%	0.0004	2.07E-07
Undecane	--	--	--	98%	0.0000	0.00E+00
TOTAL VOC	**0.23**	**636.95**	**0.32**		**12.74**	**6.37E-03**
H_2S	**0.02**	**41.16**	**0.02**		**5.5E-04**	**2.7E-07**
TOTAL HAPs	**3.90E-03**	**10.63**	**5.31E-03**		**0.21**	**1.06E-04**

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

Compressor Blowdowns

Hours per event: 1

Compressor	Number of Compressors	Volume per Compressor Event (scf/event)	Annual events per Compressor	Annual Release (scf/yr)	Hourly Volume (scf/hr)	Molecular Weight (lb/lb-mol)
Electrics	29	4600.0	486	64,832,400	27,600	23.8

Uncontrolled Emissions	VOC		H_2S		Total HAP	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Electrics	259.29	10.50	0.02	6.10E-04	0.00	0.00
TOTAL	259.29	10.50	0.02	6.10E-04	0.00	0.00

Compressor BlowDown Emissions

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

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

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

Compressor BlowDown Emissions

Estimated Gas Vented per BlowDown Event [1] =	4,600	scf/event
Compressors at Site =	29	units
Compressors Blowndown Simultaneously =	6	units
Assumed BlowDown Duration =	1	hrs/event
Compressor BlowDowns in One Year =	486	events/yr
Molecular Weight of Stream =	23.8	lb/lb-mol
Control Type =	None	

Compound	Composition (wt %)	Maximum Uncontrolled Hourly Emissions (lb/hr)	Maximum Uncontrolled Annual Emissions (tpy)
H2S	0.0009	0.02	6.10E-04
Nitrogen	5.2468	90.70	3.67
Oxygen	0.0000	--	--
Methane	78.9712	1365.09	55.29
Carbon Dioxide	0.3078	5.32	0.22
Ethane	0.4733	8.18	0.33
Propane	15.0000	259.29	10.50
Isobutane	0.0000	9.67E-11	3.92E-12
n-Butane	0.0000	4.80E-11	1.94E-12
Isopentane	0.0000	--	--
n-Pentane	0.0000	--	--
2,2-Dimethylbutane	0.0000	--	--
Cyclopentane	0.0000	--	--
2-Methylpentane	0.0000	--	--
3-Methylpentane	0.0000	--	--
n-Hexane	0.0000	--	--
Methylcyclopentane	0.0000	--	--
Benzene	0.0000	--	--
Cyclohexane	0.0000	--	--
2-Methylhexane	0.0000	--	--
3-Methylhexane	0.0000	--	--
Heptane	0.0000	--	--
Methylcyclohexane	0.0000	--	--
Toluene	0.0000	--	--
Octane	0.0000	--	--
Ethylbenzene	0.0000	--	--
p-Xylene	0.0000	--	--
m-Xylene	0.0000	--	--
o-Xylene	0.0000	--	--
Nonane	0.0000	--	--
Decane	0.0000	--	--
Undecane	0.0000	--	--
Water	0.0000	--	--
TEG	0.0000	--	--
MDEA	0.0000	--	--
Piperazine	0.0000	--	--
Total VOC	**15.000**	**259.289**	**10.501**
H_2S	**0.001**	**0.02**	**0.00**
Total HAP	**0.000**	**0.000**	**0.000**

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

Filter Coalescer Blowdowns

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

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

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

Filter Coalescer BlowDown Emissions

Estimated Gas Vented per BlowDown Event [1] =	50	scf/event
Units at Site =	2	units
Units Blowndown Simultaneously =	2	units
BlowDown Duration =	1	hrs/event
Unit BlowDowns in One Year =	2	events/yr
Molecular Weight of Stream =	23.8	lb/lb-mol
Control Type =	None	

Compound	Composition (wt %)	Maximum Uncontrolled Hourly Emissions (lb/hr)	Maximum Uncontrolled Annual Emissions (tpy)
H2S	0.0009	5.46E-05	5.46E-08
Nitrogen	5.2468	0.33	3.29E-04
Oxygen	0.0000	--	--
Methane	78.9712	4.95	4.95E-03
Carbon Dioxide	0.3078	0.02	1.93E-05
Ethane	0.4733	0.03	2.96E-05
Propane	15.0000	0.94	9.39E-04
Isobutane	0.0000	3.50E-13	3.50E-16
n-Butane	0.0000	1.74E-13	1.74E-16
Isopentane	0.0000	--	--
n-Pentane	0.0000	--	--
2,2-Dimethylbutane	0.0000	--	--
Cyclopentane	0.0000	--	--
2-Methylpentane	0.0000	--	--
3-Methylpentane	0.0000	--	--
n-Hexane	0.0000	--	--
Methylcyclopentane	0.0000	--	--
Benzene	0.0000	--	--
Cyclohexane	0.0000	--	--
2-Methylhexane	0.0000	--	--
3-Methylhexane	0.0000	--	--
Heptane	0.0000	--	--
Methylcyclohexane	0.0000	--	--
Toluene	0.0000	--	--
Octane	0.0000	--	--
Ethylbenzene	0.0000	--	--
p-Xylene	0.0000	--	--
m-Xylene	0.0000	--	--
o-Xylene	0.0000	--	--
Nonane	0.0000	--	--
Decane	0.0000	--	--
Undecane	0.0000	--	--
Water	0.0000	--	--
TEG	0.0000	--	--
MDEA	0.0000	--	--
Piperazine	0.0000	--	--
Total VOC	**15.000**	**0.939**	**0.001**
H_2S	**0.001**	**0.000**	**5.46E-08**
Total HAP	**0.000**	**0.000**	**0.000**

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

Scrubber Blowdown

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

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

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

Scrubber BlowDown Emissions

Estimated Gas Vented per BlowDown Event [1] =	100	scf/event
Units at Site =	30	units
Units Blowndown Simultaneously =	1	units
BlowDown Duration =	1	hrs/event
Unit BlowDowns in One Year =	1	events/yr
Molecular Weight of Stream =	23.8	lb/lb-mol
Control Type =	None	

Compound	Composition (wt %)	Maximum Uncontrolled Hourly Emissions (lb/hr)	Maximum Uncontrolled Annual Emissions (tpy)
H2S	0.0009	5.46E-05	2.73E-08
Nitrogen	5.2468	0.33	1.64E-04
Oxygen	0.0000	--	--
Methane	78.9712	4.95	2.47E-03
Carbon Dioxide	0.3078	0.02	9.64E-06
Ethane	0.4733	0.03	1.48E-05
Propane	15.0000	0.94	4.70E-04
Isobutane	0.0000	3.50E-13	1.75E-16
n-Butane	0.0000	1.74E-13	8.70E-17
Isopentane	0.0000	--	--
n-Pentane	0.0000	--	--
2,2-Dimethylbutane	0.0000	--	--
Cyclopentane	0.0000	--	--
2-Methylpentane	0.0000	--	--
3-Methylpentane	0.0000	--	--
n-Hexane	0.0000	--	--
Methylcyclopentane	0.0000	--	--
Benzene	0.0000	--	--
Cyclohexane	0.0000	--	--
2-Methylhexane	0.0000	--	--
3-Methylhexane	0.0000	--	--
Heptane	0.0000	--	--
Methylcyclohexane	0.0000	--	--
Toluene	0.0000	--	--
Octane	0.0000	--	--
Ethylbenzene	0.0000	--	--
p-Xylene	0.0000	--	--
m-Xylene	0.0000	--	--
o-Xylene	0.0000	--	--
Nonane	0.0000	--	--
Decane	0.0000	--	--
Undecane	0.0000	--	--
Water	0.0000	--	--
TEG	0.0000	--	--
MDEA	0.0000	--	--
Piperazine	0.0000	--	--
Total VOC	**15.000**	**0.939**	**0.000**
H_2S	**0.001**	**0.000**	**2.73E-08**
Total HAP	**0.000**	**0.000**	**0.000**

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

Pipeline Blowdown

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

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

Maximum Uncontrolled Annual Emissions for each Unit (tpy) = [Volume of gas in pipe (scf/event)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] x [frequency of events (events/yr)] / [379.5 (scf/lb-mol)] / [2,000 (lb/ton)]

Pipeline Blowdown Emissions

Pipeline Volume Vented =	79,397	scf/yr
Molecular Weight of Stream =	23.8	lb/lb-mol
Control Type =	None	

Compound	Composition (wt %)	Maximum Uncontrolled Hourly Emissions (lb/hr)	Maximum Uncontrolled Annual Emissions (tpy)
H2S	0.0009	0.02	2.17E-05
Nitrogen	5.2468	260.91	0.13
Oxygen	0.0000	--	--
Methane	78.9712	3926.98	1.96
Carbon Dioxide	0.3078	15.31	7.65E-03
Ethane	0.4733	23.54	0.01
Propane	15.0000	745.90	0.37
Isobutane	0.0000	2.78E-10	1.39E-13
n-Butane	0.0000	1.38E-10	6.91E-14
Isopentane	0.0000	--	--
n-Pentane	0.0000	--	--
2,2-Dimethylbutane	0.0000	--	--
Cyclopentane	0.0000	--	--
2-Methylpentane	0.0000	--	--
3-Methylpentane	0.0000	--	--
n-Hexane	0.0000	--	--
Methylcyclopentane	0.0000	--	--
Benzene	0.0000	--	--
Cyclohexane	0.0000	--	--
2-Methylhexane	0.0000	--	--
3-Methylhexane	0.0000	--	--
Heptane	0.0000	--	--
Methylcyclohexane	0.0000	--	--
Toluene	0.0000	--	--
Octane	0.0000	--	--
Ethylbenzene	0.0000	--	--
p-Xylene	0.0000	--	--
m-Xylene	0.0000	--	--
o-Xylene	0.0000	--	--
Nonane	0.0000	--	--
Decane	0.0000	--	--
Undecane	0.0000	--	--
Water	0.0000	--	--
TEG	0.0000	--	--
MDEA	0.0000	--	--
Piperazine	0.0000	--	--
Total VOC	**15.000**	**745.901**	**0.373**
H_2S	**0.001**	**0.022**	**0.000**
Total HAP	**0.000**	**0.000**	**0.000**

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

Pump Blowdowns

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

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

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

Pump BlowDown Emissions

Estimated Gas Vented per BlowDown Event [1] =	16	scf/event
Units at Site =	34	units
Units Blowndown Simultaneously =	34	units
Assumed BlowDown Duration =	1	hrs/event
Unit BlowDowns in One Year =	1	events/yr
Molecular Weight of Stream =	23.8	lb/lb-mol
Control Type =	None	

Compound	Composition (wt %)	Maximum Uncontrolled Hourly Emissions (lb/hr)	Maximum Uncontrolled Annual Emissions (tpy)
H2S	0.0009	2.97E-04	4.36E-09
Nitrogen	5.2468	1.79	2.63E-05
Oxygen	0.0000	--	--
Methane	78.9712	26.91	3.96E-04
Carbon Dioxide	0.3078	0.10	1.54E-06
Ethane	0.4733	0.16	2.37E-06
Propane	15.0000	5.11	7.52E-05
Isobutane	0.0000	1.91E-12	2.80E-17
n-Butane	0.0000	9.46E-13	1.39E-17
Isopentane	0.0000	--	--
n-Pentane	0.0000	--	--
2,2-Dimethylbutane	0.0000	--	--
Cyclopentane	0.0000	--	--
2-Methylpentane	0.0000	--	--
3-Methylpentane	0.0000	--	--
n-Hexane	0.0000	--	--
Methylcyclopentane	0.0000	--	--
Benzene	0.0000	--	--
Cyclohexane	0.0000	--	--
2-Methylhexane	0.0000	--	--
3-Methylhexane	0.0000	--	--
Heptane	0.0000	--	--
Methylcyclohexane	0.0000	--	--
Toluene	0.0000	--	--
Octane	0.0000	--	--
Ethylbenzene	0.0000	--	--
p-Xylene	0.0000	--	--
m-Xylene	0.0000	--	--
o-Xylene	0.0000	--	--
Nonane	0.0000	--	--
Decane	0.0000	--	--
Undecane	0.0000	--	--
Water	0.0000	--	--
TEG	0.0000	--	--
MDEA	0.0000	--	--
Piperazine	0.0000	--	--
Total VOC	**15.000**	**5.111**	**7.52E-05**
H_2S	**0.001**	**2.97E-04**	**4.36E-09**
Total HAP	**0.000**	**0.000**	**0.00E+00**

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

Pigging Emissions

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

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

Maximum Uncontrolled Annual Emissions for each Unit (tpy) = [Volume of gas in pipe (scf/event)] x [MW of stream (lb/lb-mol)] x [wt % VOC or speciated constituent] x [frequency of events (events/yr)] / [379.5 (scf/lb-mol)] / [2,000 (lb/ton)]

For sites with multiple units, the total annual emissions are calculated by summing emissions for all units. It is assumed only one unit can be pigged/purged in one hour; therefore, the maximum volume of the units is used for the hourly calculations.

Pigging and Purging Emissions

Unit #1 - Volume Vented =	2305	scf/event
Unit #2 - Volume Vented =	2305	scf/event
Unit #3 - Volume Vented =	2305	scf/event
Unit #4 Volume Vented =	2305	scf/event
Unit #4 Volume Vented =	2305	scf/event
Unit #6 Volume Vented =	2305	scf/event
Maximum Number of Hourly Pigging/Purging Events =	1	events/hr
Unit #1 - Annual Number of Events =	156	events/yr
Unit #2 - Annual Number of Events =	156	events/yr
Unit #3 - Annual Number of Events =	156	events/yr
Unit #4 - Annual Number of Events =	156	events/yr
Unit #5 - Annual Number of Events =	156	events/yr
Unit #6 - Annual Number of Events =	156	events/yr
Pipelines Purged Simultaneously =	1	lines
Molecular Weight of Stream =	23.8	lb/lb-mol
Control Type =	None	

Compound	Composition (wt %)	Maximum Uncontrolled Hourly Emissions (lb/hr)	Maximum Uncontrolled Annual Emissions (tpy)	Control Efficiency (%)	Maximum Controlled Hourly Emissions (lb/hr)	Maximum Controlled Annual Emissions (tpy)
H2S	0.0009	1.26E-03	5.89E-04	**0.98**	**2.51582E-05**	**1.1774E-05**
Nitrogen	5.2468	7.58	3.55	**0.98**	--	--
Oxygen	0.0000	--	--	**0.98**	0.0000	0.0000
Methane	78.9712	114.03	53.36	**0.98**	2.2805	1.0673
Carbon Dioxide	0.3078	0.44	0.21	**0.98**	0.0089	0.0042
Ethane	0.4733	0.68	0.32	**0.98**	0.0137	0.0064
Propane	15.0000	21.66	10.14	**0.98**	0.4332	0.2027
Isobutane	0.0000	8.08E-12	3.78E-12	**0.98**	0.0000	0.0000
n-Butane	0.0000	4.01E-12	1.88E-12	**0.98**	0.0000	0.0000
Isopentane	0.0000	--	--	**0.98**	0.0000	0.0000
n-Pentane	0.0000	--	--	**0.98**	0.0000	0.0000
2,2-Dimethylbutane	0.0000	--	--	**0.98**	0.0000	0.0000
Cyclopentane	0.0000	--	--	**0.98**	0.0000	0.0000
2-Methylpentane	0.0000	--	--	**0.98**	0.0000	0.0000
3-Methylpentane	0.0000	--	--	**0.98**	0.0000	0.0000
n-Hexane	0.0000	--	--	**0.98**	0.0000	0.0000
Methylcyclopentane	0.0000	--	--	**0.98**	0.0000	0.0000
Benzene	0.0000	--	--	**0.98**	0.0000	0.0000
Cyclohexane	0.0000	--	--	**0.98**	0.0000	0.0000
2-Methylhexane	0.0000	--	--	**0.98**	0.0000	0.0000
3-Methylhexane	0.0000	--	--	**0.98**	0.0000	0.0000
Heptane	0.0000	--	--	**0.98**	0.0000	0.0000
Methylcyclohexane	0.0000	--	--	**0.98**	0.0000	0.0000
Toluene	0.0000	--	--	**0.98**	0.0000	0.0000
Octane	0.0000	--	--	**0.98**	0.0000	0.0000
Ethylbenzene	0.0000	--	--	**0.98**	0.0000	0.0000
p-Xylene	0.0000	--	--	**0.98**	0.0000	0.0000
m-Xylene	0.0000	--	--	**0.98**	0.0000	0.0000
o-Xylene	0.0000	--	--	**0.98**	0.0000	0.0000
Nonane	0.0000	--	--	**0.98**	0.0000	0.0000
Decane	0.0000	--	--	**0.98**	0.0000	0.0000
Undecane	0.0000	--	--	**0.98**	0.0000	0.0000
Water	0.0000	--	--	**0.98**	0.0000	0.0000
TEG	0.0000	--	--	**0.98**	0.0000	0.0000
MDEA	0.0000	--	--	**0.98**	0.0000	0.0000
Piperazine	0.0000	--	--	**0.98**	0.0000	0.0000
Total VOC	**15.000**	**21.659**	**10.136**	**30.38**	**0.45**	**0.21**
H_2S	**0.001**	**0.001**	**0.001**	**0.98**	**0.00**	**0.00**
Total HAP	**0.000**	**0.000**	**0.000**	**5.88**	**0.00**	**0.00**

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

Surface Coating Emissions

Basis of Calculation:

TCEQ's Painting Basics and Emissions Calculations for TCEQ Air Quality Permit Applications, November 5, 2012

VOC calculations are based on the product usage, VOC or HAP content, and density of a general paint used for MSS. The paint chosen has the highest VOC content of all paints typically used for these activities. It has been assumed that all VOC in the solution escapes to atmosphere. Emissions are calculated using the following equations:

Hourly VOC Emissions (lb/hr) = [Usage Rate (gal/hr)] * [VOC or HAP Content (lb/gal)]

Annual VOC Emissions (tpy) = [Usage Rate (gal/yr)] * [VOC or HAP Content lb/gal)] / [2,000 (lb/ton)]

It is assumed that all surface coating products are sprayed. Particulate emissions are calculated based on the usage rate and solids content for the product, as well as a transfer efficiency and fallout factor obtained from TCEQ's Painting Basics and Emissions Calculations for TCEQ Air Quality Permit Applications. The following equations are used to calculated particulate emissions:

Short-term PM emissions (lb/hr) = Solids Content (%) x Density (lb/gal) x Volume of Product used (gal/hr) x (1 - Transfer Efficiency (%)) x (1-Fallout Factor (%))

Potential VOC and HAP Emissions from Paint Usage (MSS)

Product	Density (lb/gal) [1]	VOC Content (lb/gal) [1]	HAP Content (wt %) [1]	Usage Rates		VOC Emissions		HAP Emissions	
				(gal/hr)	(gal/yr)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
Paint	10.71	2.92	5.0	25	100	73.0	0.15	13.39	0.03
					Totals	**73.0**	**0.15**	**13.39**	**0.03**

[1] Based on representative characteristics of common paint.

Potential $PM/PM_{10}/PM_{2.5}$ Emissions from Spray Paint Usage (MSS)

Product	Solids Content [1] (wt %)	Usage Rates		Object Coated	Transfer Efficiency [2] (%)	Fallout Factor (%) [3]			PM Emissions		PM_{10} Emissions		$PM_{2.5}$ Emissions	
		(gal/hr)	(gal/yr)			PM	PM_{10}	$PM_{2.5}$	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
Paint	80	25.00	100.00	Flat Surface	75	98.56	99.87	99.99	0.77	1.54E-03	0.07	1.39E-04	0.01	1.07E-05

[1] Per the representative Material Safety Data Sheet (MSDS)

[2] Transfer efficiency per TCEQ guidance (TCEQ's Painting Basics and Emissions Calculations for TCEQ Air Quality Permit Applications, November 5, 2012).

[3] Fallout factors per TCEQ's Painting Basics and Emissions Calculations for TCEQ Air Quality Permit Applications, November 5, 2012, Table 2.

Speciated Emissions

Composition	% by Weight	Emissions	
		(lb/hr)	(tpy)
Ethylbenzene	0.7	1.87	<0.01
Xylene	4.0	10.71	0.02
Medium Aromatic Hydrocarbons	2.0	5.36	0.01
Napthalene	0.3	0.80	<0.01
Methyl Ethyl Ketone	5.0	13.39	0.03
n-Butyl Acetate	9.0	24.10	0.05
1-methoxy-2-propanol Acetate	6.0	16.07	0.03
		72.29	**0.14**

Abrasive Blasting

Basis of Calculation:
These calculations represent emissions resulting from dry abrasive blasting. Emission factors are based on U.S. EPA AP-42, Chapter 13.2.6, Abrasive Blasting.

Dry Abrasive Blasting

Blasting Material	Usage per Event (lb/event)	Duration of Event (hr/event)	Events per Year (event/yr)	Emissions Factor [1] (lb/1000 lb abrasive)			Hourly Emissions (lb/hr)			Annual Emissions (tpy)		
				PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$
Sand	3,100	6.00	1.00	91	13	1.3	47.02	6.72	0.67	0.14	0.02	<0.01
						Total Emissions:	**47.02**	**6.72**	**0.67**	**0.14**	**0.02**	**<0.01**

[1] Worst-case emission factor for PM based on 15 mph wind speed.
[2] Emission Factors from AP-42 13.2.6-1

mph	PM Emission Factor
5	27
10	55
15	91

Table 13.2.6-1. PARTICULATE EMISSION FACTORS FOR ABRASIVE BLASTING[a]

EMISSION FACTOR RATING: E

Source	Particle size	Emission factor, lb/1,000 lb abrasive
Sand blasting of mild steel panels[b] (SCC 3-09-002-02)	Total PM	
	5 mph wind speed	27
	10 mph wind speed	55
	15 mph wind speed	91
	PM-10[c]	13
	PM-2.5[c]	1.3
Abrasive blasting of unspecified metal parts, controlled with a fabric filter[d] (SCC 3-09-002-04)	Total PM	0.69

Tank Degassing

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

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

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

Tank Degassing Emissions - Non-Forced Ventilation

Estimated Gas Vented per Degassing Event =	1,697	scf/event
Number of Tanks =	8	units
Tank Degassing Events Occurring Simultaneously =	1	units
Degassing Event Duration =	24	hrs/event
Tank Degassing Events in One Year =	4	events/yr
Molecular Weight of Stream =	45.7	lb/lb-mol
Is Forced Ventilation used?	No	
Control Type =	None	

Clingage-to-vessel Volume		
Clingage volume [1] =	0.27	scf
Clingage thickness [2] =	0.0004	ft
Diameter =	12	ft
Height =	15	ft
Liquid Density [1] =	62.40	lb/scf

[1] The roof of the tank is not included in the clingage volume since no liquid will reach the roof. Liquid density for water is used as a surrogate since the density of each condensate sample is not available and will vary over time.

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

Compound	Composition (wt %)	Maximum Uncontrolled Hourly Emissions (lb/hr)	Maximum Uncontrolled Annual Emissions (tpy)
Total VOC	**100**	**25.44**	**1.09**
Total HAP	**25**	**6.36**	**0.272**
Total H_2S	**0.02**	**0.01**	**2.18E-04**

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

Section 6.a

Green House Gas Emissions

(Submitting under 20.2.70, 20.2.72 20.2.74 NMAC)

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

Calculating GHG Emissions:

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

Sources for Calculating GHG Emissions:

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

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

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

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

TARGA

Targa Midstream Services, LLC, Copperhead Gas Plant
ESTIMATION OF FACILITY-WIDE GHG EMISSIONS

GHG Emission Source	Total GHG Emissions (m.t. CO_2e)	(tons CO_2e)
Natural Gas Combustion	327,898	361,445
Fugitives	24	26
Dehy Unit	518	571
tal Estimated Facility Emissions:	328,440	362,042

Conversion Factors		Global Warming Potential	
1.10231	ton/m.t.	CO_2	1
0.001	m.t./kg	CH_4	25
8,760	Hrs/yr	N_2O	298

CO_2 (mol %)	CH_4 (mol %)	C_2H_3 (mol %)	C_3H_8 (mol %)	C_4H_{10} (mol %)	C5+ (mol %)
2.35886	73.89146	11.56952	6.24368	2.75657	1.20219

* Processing emissions for compressor, venting and flaring estimated using EPA's 40 CFR Subpart W Onshore Natural Gas Processing Screening Tool
Mole % CO_2 for Acid gas venting used for screening obtained from process simulation data.

Note:
Carbon Dioxide Equivalent (CO_2e) emissions are calculated in the tables below by multiplying emissions by global warming potentials for each pollutant.
Emissions estimates converted to short tons in the tables below using conversion factor from 40 CFR 98 Subpart A for comparison to PSD/TV thresholds.
Global Warming Potentials obtained from 40 CFR 98 Supart A, Table A-1.
Mol % values obtained from the gas analysis from a representative facility.

Natural Gas Combustion Emissions

Emissions Source	Emission Point Identification	Rated Horsepower	Capacity (MMBtu/hr)	Emissions Factors [1] CO_2 (kg/MMBtu)	CH_4 (kg/MMBtu)	N_2O (kg/MMBtu)	Emissions (m.t.) CO_2	CH_4	N_2O	Emissions (tons/yr) CO_2	N_2O	CH_4	Emissions (m.t. CO_2e) CO_2	CH_4	N_2O	Total Emissions (m.t. CO_2e)	(tons CO_2e)
Dehydrator Reboiler	H-1	--	3.00	53.06	0.0010	0.00010	1,394.42	0.026	0.0026	1,537.08	0.0029	0.029	1,394.42	0.66	0.78	1,396	1,539
Dehydrator Reboiler	H-2	--	3.00	53.06	0.0010	0.00010	1,394.42	0.026	0.0026	1,537.08	0.0029	0.029	1,394.42	0.66	0.78	1,396	1,539
HMO Heater 1701	H-1701-CHP	--	73.04	53.06	0.0010	0.00010	33,949.40	0.640	0.0640	37,422.76	0.0705	0.705	33,949.40	16.00	19.07	33,984	37,461
HMO Heater 1702	H-1702-CHP	--	73.04	53.06	0.0010	0.00010	33,949.40	0.640	0.0640	37,422.76	0.0705	0.705	33,949.40	16.00	19.07	33,984	37,461
HMO Heater 1703	H-1703-CHP	--	73.04	53.06	0.0010	0.00010	33,949.40	0.640	0.0640	37,422.76	0.0705	0.705	33,949.40	16.00	19.07	33,984	37,461
HMO Heater 1704	H-1704-CHP	--	35.50	53.06	0.0010	0.00010	16,500.60	0.311	0.0311	18,188.78	0.0343	0.343	16,500.60	7.77	9.27	16,518	18,208
Regen Gas Heater 4701	H-4701-CHP	--	13.02	53.06	0.0010	0.00010	6,050.37	0.114	0.0114	6,669.39	0.0126	0.126	6,050.37	2.85	3.40	6,057	6,676
HMO Heater 1701	H-1701-CH2	--	73.04	53.06	0.0010	0.00010	33,949.40	0.640	0.0640	37,422.76	0.0705	0.705	33,949.40	16.00	19.07	33,984	37,461
HMO Heater 1702	H-1702-CH2	--	73.04	53.06	0.0010	0.00010	33,949.40	0.640	0.0640	37,422.76	0.0705	0.705	33,949.40	16.00	19.07	33,984	37,461
HMO Heater 1703	H-1703-CH2		73.04	53.06	0.0010	0.00010	33,949.40	0.640	0.0640	37,422.76	0.0705	0.705	33,949.40	16.00	19.07	33,984	37,461
HMO Heater 1704	H-1704-CH2	--	35.50	53.06	0.0010	0.00010	16,500.60	0.311	0.0311	18,188.78	0.0343	0.343	16,500.60	7.77	9.27	16,518	18,208
Regen Gas Heater 4701	H-4701-CH2	--	13.02	53.06	0.0010	0.00010	6,050.37	0.114	0.0114	6,669.39	0.0126	0.126	6,050.37	2.85	3.40	6,057	6,676
	VCU		0.45	53.06	0.0010	0.00010	208.43	0.004	0.0004	229.75	0.0004	0.004	208.43	0.10	0.12	209	230
															Total Natural Gas Combustion:	252,305	278,118

Notes:
1. Emission factors for GHG obtained from 40 CFR 98 Supart C, Tables C-1 and C-2.

Source ID Number	Description	Maximum Hours of Operation	Annual Gas Usage (scf/hr)	Annual Gas Processed (scf/yr)	CO_2 (mol %)	CH_4 (mol %)	Emission Factor N_2O (m.t./MMscf)	Emissions CO_2 (m.t.)	CH_4 (m.t.)	N_2O (m.t.)	Emissions CO_2 (tons/yr)	N_2O (tons/yr)	CH_4 (tons/yr)	Emissions CO_2 (m.t. CO_2e)	CH_4 (m.t. CO_2e)	N_2O (m.t. CO_2e)	Total Emissions (m.t. CO_2e)	(tons CO_2e)
	Flare - Dehydrator/Tank																	
FLARE	Control	8,760	575	5,037,058	0.024	0.74	7.10E-07	54.67	10.4079	0.0000036	60.27	0.0000	11.473	54.67	260.20	0.00107	314.87	347.08
FL-1800-CHP	Flare 1: Steady State	8,760	1,550	13,578,000	0.050	0.68	7.10E-07	37,550.26	3.5518	0.0000096	41,392.03	0.0000	3.915	37,550.26	88.79	0.00287	37,639.06	41,489.91
FL-1800-CH2	Flare 2: Steady State	8,760	1,550	13,578,000	0.050	0.68	7.10E-07	37,550.26	3.5518	0.0000096	41,392.03	0.0000	3.915	37,550.26	88.79	0.00287	37,639.06	41,489.91
Note - CO_2 and N_2O Emissions estimated using API Compendium Section 4.6															***Total Flare Combustion:***		314.87	83,326.90

Dehy Units

Source ID Number	Description	Maximum Days of Operation	Annual Gas Processed (MMscf/yr)	Conversion Factor (m.t./ton)	Emissions[1] CO_2 (tons)	CH_4 (tons)	N_2O (tons)	Emissions CO_2 (tons/yr)	N_2O (tons/yr)	CH_4 (tons/yr)	Emissions CO_2 (m.t. CO_2e)	CH_4 (m.t. CO_2e)	N_2O (m.t. CO_2e)	Total Emissions (m.t. CO_2e)	(tons CO_2e)
DEHY-1	GLYCOL DEHYDRATOR	365	150	1.10231	49.60	9.44	--	54.67	--	10.408	44.99	214.14	--	259.13	285.64
DEHY-2	GLYCOL DEHYDRATOR	365	150	1.10231	49.60	9.44	--	54.67	--	10.408	44.99	214.14	--	259.13	285.64

[1] *Emissions estimated using process simulation and a natural gas feed rate of 150 MMcf/day.*

Fugitive Sources

Emissions Source	Emission Point Identification	Annual Condensate Production (bbl/yr)	Annual Condensate Production (1,000 gal/yr)	Default Liquid CH_4 Content [1] (mol %)	Emission Factor VOC (lb/1,000 gal)	Emissions VOC (tons)	VOC (m.t.)	Control (%)	Controlled VOC (m.t.)	Emissions [2] (m.t.) CH_4	Emissions (ton/yr) CH_4	Total Emissions (m.t. CO_2e)	(tons CO_2e)
Condensate Truck Loading	LOAD-1	33,792	1,419	27.40	4.79	3.40	3.08	0%	3.08	0.84	0.93	21.11	21.11
Scrubber Oil	LOAD-2	824,564	34,632	28.40	-	0.76	0.69	0%	0.69	0.20	0.22	4.90	4.90

Notes:
1. Default CH_4 content for crude oil per API compendium Section 5.4 and Appendix B.
2. Emissions estimated using API Compendium, Section 5.5.

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.

Heaters and Reboilers (H-1, H-2, H-1701-CHP, H-1702-CHP, h-1703-CHP H-1704-CHP, H-4701-CHP, H-1701-CH2, H-1702-CH2, H-1703-CH2, H-1704-CH2, H-4701-CH2**)**

- AP-42 Chapter 1.4 *Natural Gas Combustion*
- Manufacturer specifications
- 20.2.50.119.B(1) NMAC
- 40 CFR 98 Subpart C Table C-1 and Table C-2

Inlet Gas Analysis

- Compressor station inlet gas analysis
- Blended Inlet gas analysis – this is a composite of potential streams that has been normalized and weighted for worst case emissions.

TEG Glycol Dehydrators (DEHY1, DEHY2)

- BR&E ProMax

Amine Units (A-CHP, A-CH2)

- BR&E ProMax•

Flares (FLARE, FL1800-CHP, FL-1800-CH2, VCU)

- TNRCC RG-109 Emission Factors

Tanks (TK-1, TK-2, TK-3, TK-4, TK-5, TK-6, TK-1907-CHP, TK-1908-CHP, TK-1907-CH2, TK-1908-CH2)

- BR&E ProMax

Condensate Loading (LOAD-1 and LOAD-2), L-P

- AP-42 Chapter 5.2, *Transportation and Marketing of Petroleum Liquids*
- BR&E ProMax

Fugitives (FUG, FUG-CHP, FUG-CH2)

- Composite Gas Analysis
- Table 2-4 of the EPA Protocol for Equipment Leak Emission Estimates, November 1995

Haul Roads (HAUL)

- AP-42 Chapter 13.2.2, *Unpaved Roads*, Table 13.2.2-2

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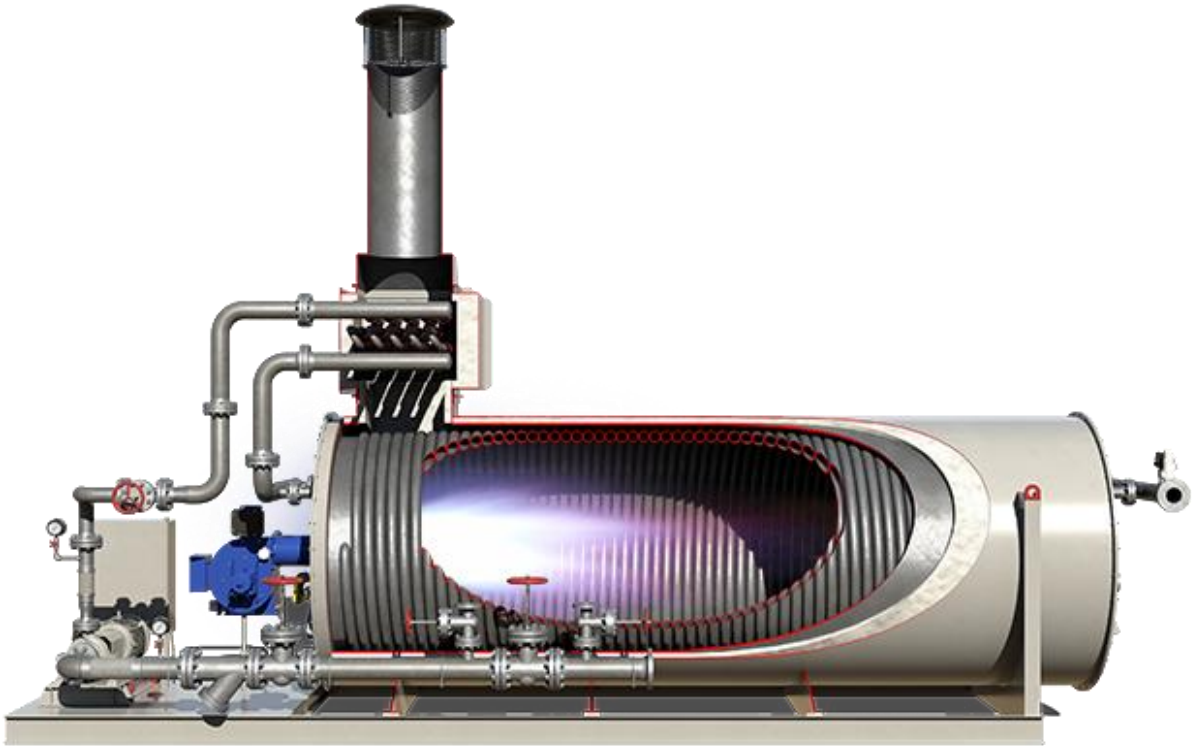
H-1701, H-1702 and H-1703 HMO for Targa's DOU Copperhead plant in NM

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This is a cut away depiction of our standard horizontal heater internals. It does not necessarily represent the package quoted. The main advantage of this design is the extremely large radiant section. Since this is where most heat transfer occurs, the ideal design utilizes a large radiant section. The two-pass heater life expectancy is 2-4 times that of other styles.

ASTEC ADVANTAGES:

1. The radiant heating surface of two pass heaters is typically 50% greater compared to that of other style heaters. The result is that the two-pass heater will have lower radiant flux rates. High radiant heat flux causes high metal wall temperatures, causing premature coil failure and premature degradation of the thermal fluid. The life expectancy of the two-pass heater will be 2-4 times that of other designs
2. Should the coil ever have to be replaced, the bolted cover(s) of the two-pass design allow(s) for easy coil replacement without having to replace the entire heater or requiring shipment back to the factory for costly repair
3. There is more internal "room" in the less crowded two pass heater which allows for greater space between the flame and the coil. This lessens the chances for flame impingement and thus lengthens coil and thermal fluid life. Ease of inspection is also increased
4. The velocity in the coil is in the range of 5 – 13 fps as recommended by most thermal fluid manufacturers. Due to the low average radiant heat flux of the two pass designs, the heater does not have to rely on excessive fluid velocity (which can lead to erosion) to keep the film temperatures low. The result is the most forgiving heater on the market
5. The heater has an 18" bolted man-way. This allows access to the radiant section without removing the cover, the burner, the fuel train, the can and the conduit. This internal inspection is required in many locations
6. The heater utilizes complete flow through a uniform diameter coil without mixing or by-passing.
7. Front and rear peep sight(s) for viewing flame pattern and coil condition
8. No orifice plates required for balancing the flow
9. Insulation is on the inside of the heater where it cannot be damaged during shipment
10. Totally Packaged Heaters
11. In House Panel Shop
12. In House Coil Manufacturing
13. In House Hydro-Test
14. In House Painting / Sandblasting
15. In House Fully Function Tested Heaters
16. Custom (Highly Specified or Standard Units)
17. On Site Training
18. In House Service Department which is available for on-site training and start up
19. In House Engineering Department
20. Seventeen AutoCAD stations utilizing AutoCAD / Inventor / AutoCAD Electrical
21. In House Quality Assurance / Control Department
22. Heater manufacturer since 1977
23. Heatec Coil warranty will be 3 years from ship date. Typical lifetime of this heater without coil replacement is 20 to 30 years
24. Stamps and Certifications

EQUIPMENT DESIGN DATA:

HCI 25010-50-Q-G	IP UNITS	SI UNITS
Heater Capacity (Btu/hr) (MW)	55,000,000	16.12
Firing Rate (HHV) (Btu/hr) (MW)	73,037,048	21.41
Heater Circulation Rate (lb/hr) (kg/hr) {Constant}	1,022,363	463,615
Heater Circulation Rate (Gal/min) (m^3/hr) {Constant}	2,486	565
Minimum Allowable Circulation Rate (Gal/min) (m^3/hr)	1,989	452
Heater Inlet Temperature (°F) (°C)	282	139
Heater Outlet Temperature (°F) (°C)	375	191
Stack Temperature (°F) (°C)	676	358
Calculated Heater Efficiency (%) (LHV) [See Note 1]	83.6	83.6
Calculated ΔP through Heater (psid) (Bar) (Clean)	19.0	1.3
Heater Volume (Gallons) (m^3)	3,015	11.4
Total Coil Surface Area (ft^2) (m^2)	6,548	608.6
Overall Flux Rate (Btu/hr-ft^2) (kW/m^2)	8,399	26.5
Radiant Surface Area (ft^2) (m^2)	1,755	163.1
Average Radiant Flux Rate (Btu/hr-ft^2) (kW/m^2)	16,231	51.2
Maximum Radiant Flux Rate (Btu/hr-ft^2) (kW/m^2) AICHE	21,911	69.1
Maximum Metal Temperature (°F) (°C) AICHE	476	246
Maximum Calculated Film Temperature (°F) (°C) AICHE	459	237
Average Thermal Fluid Velocity (ft/s) (m/s)	10.2	3.1
Combustion Air Flow Rate (sFt^3/hr) (Nm^3/hr)	908,285	25,723
Combustion Gas Flow Rate (sFt^3/hr) (Nm^3/hr)	73,337	2,077
Flue Gas Flow Rate (sFt^3/hr) (Nm^3/hr)	994,857	28,175
Flue Gas Pressure Drop (" WC) (mmHg)	1.19	61.49

Note 1: Based on HHV of typical natural gas. Guaranteed efficiency is 1% less.

SYSTEM PARAMETERS:

The following system parameters are incorporated into this proposal.

Plant location	New Mexico
Plant elevation (fasl)	3,500
Heater location	Outdoor
Ambient Temperature (ºF)	0 to 105
Burner turndown	6:1 Gas
Excess air %	15
Flue Gas Recirculation %	15
Noise Limit (dB(A))	< 85 at 3 ft
Heater orientation	Horizontal
Primary fuel (psig @ rated capacity of the burner)	Fuel gas (125)
Compressed air from clean, dry, safe source	10 to 40 scfm @ 116 to 80 psig
Electrical	480 V / 3 PH / 60 Hz
Control voltage	110 V / 1 PH / 60 HZ / 24 V DC
Area Classification	Class 1 Div. 2 Group C & D
Thermal fluid (Not Included)	Chemtherm 550 or Equal

	FUEL TABLE	MOL %
N_2	Nitrogen	1.84
H_2O	Water	0.00
H_2	Hydrogen	0.00
H_2S	Hydrogen Sulfide	0.00001
CO_2	Carbon Dioxide	0.00
CO	Carbon Monoxide	0.00
CH_4	Methane	97.6
C_2H_6	Ethane	0.54
C_3H_8	Propane	0.0235
C_4H_{10}	i-Butane	0.00
C_4H_{10}	n-Butane	0.00
C_5H_{12}	i-Pentane	0.00
C_5H_{12}	n-Pentane	0.00
C_6H_{14}	n-Hexane	0.00
O_2	Oxygen	0.00

THERMAL FLUID PROPERTIES	
Inlet Temperature (°F)	282.5
Inlet Density (lb/ft^3)	51.27
Inlet Heat Capacity (Btu/(lb*°F))	0.560
Inlet Thermal Conductivity (Btu/(h*ft*°F))	0.075
Inlet Dynamic Viscosity (cP)	1.923
Outlet Temperature (°F)	375
Outlet Density (lb/ft^3)	49.23
Outlet Heat Capacity (Btu/(lb*°F))	0.603
Outlet Thermal Conductivity (Btu/(h*ft*°F))	0.067
Outlet Dynamic Viscosity (cP)	1.012

APPROXIMATE PHYSICAL DATA:

The equipment will have the following estimated dimensions and dry weights. Piping and controls external to the heater are to be insulated in the field by customer. All equipment will be assembled and mounted as stated below. Items too large for shipment, or subject to damage during shipment, will be shipped loose (unattached) and will require re-assembly in the field.

Equipment	L (ft)	W (ft)	H (ft)	Wt (Lbs)	Mounting
Horizontal Heater	52.8	12.4	12.7	94,850	Skid
Economizer	10.4	6.1	3.5	11,809	Top of Heater
Exhaust Stack		4.0	8.0	1,029	Top of Economizer
Blower (HP)	100	TEFC			Front Cover of Heater
Pilot Gas Train	NPT	0.5	Inch		Side of Heater
Main Gas Train	NPT	4.0	Inch		Side of Heater
Control Panel	3.0	1.0	4.0	500	Front of Heater Skid

DRAWINGS / ENGINEERING:

Drawing period is based on current engineering load and is subject to change without notice. Drawings will be sent via e-mail or provided on USB thumb drive (AutoCAD). Please note that the tolerance of our drawings is + or – ¼". Construction of connections to heater should allow for modifications to be made in the field with at least 2 degrees of freedom.

Description	Description
Manuals on CD	General Arrangement
P & ID	Bill of Material Mechanical
Electrical Diagrams (Ladder Type)	Bill of Material Electrical
Nameplate Details	Hydro-test Report
Lift Lug Details	Spare Parts
Motor Curves	NDT Reports
Motor Data Sheets	Utility Requirements
Material Certifications	Quality Control Manual
Foundation Loadings	Mechanical Design Calculations

DESIGN CRITERIA:
The equipment will be designed to the requirements stated below. Quality is assured by our in house quality control department. Thickness of coil and shell will not be affected by the manufacturing process as we keep all diameters above the limits that would have an impact on it. Hydrostatic testing will be carried out at our facility and witnessed by our quality control manager.

Heater Coil Design:
ASME Section VIII design @ 650 ºF to -20 ºF, @ 300 psig with CA = 0.0625
Heater Shell Design:
Non-code design @ 300 ºF to -20 ºF @ 15 In W.C. with CA = 0.0625
Fuel Train Design:
105 ºF to 0 ºF / UL / NFPA 87 & 70
Heater Stack Design:
Non-code 800 ºF to -20 ºF @ +15” W.C. w/ CA = .0625
Panel & Controls:
105 ºF to 0 ºF / UL 508 A / NFPA 87 & 70
NEC Class I Division 2 Group C & D T3
NEMA 4X (316 Stainless Steel) with “Z” type purging
Junction Box Enclosure:
NEMA 4X (316 Stainless Steel)
Ignition Transformer Enclosure:
NEMA 4X (316 Stainless Steel)

PAINTING:
Customer specified paint system.

Purchased items will be painted with vendors’ standard paint, stainless items will remain unpainted.

EQUIPMENT RECOMMENDATIONS:
The heater is designed, manufactured, wired, and tested at our facility in Chattanooga, Tennessee USA. It is completely packaged and will include the following:

HEATEC HCI HEATER:
- Two-pass tight-wound helical coil heater
- Carbon steel (SA106 Gr. B seamless) schedule 40 tight-wound helical coil
- Single 12" inlet and outlet 300 # (SA105) flanges
- Heater coil hydro-testing per ASME code
- Coil will be stamped and receive National Board Registration
- 304 SS coil supports (skip welded to shell to help dissipate heat transmission)
- Coil is enclosed by an (minimum ¼" thick) A36 carbon steel shell with bolted end covers (w/ lift eyes)
- Internally insulated with ceramic fiber blanket, using welded 310 SS pins with washers for support. Blanket will receive a coat of rigidizer
- Peep sight in rear cover
- Inert gas smothering connection in front cover. (Gas and controls by others)
- Structural steel skid with saddles welded to channels to form a skid mounted frame, and a five foot skid deck extension for mounting controls
- Skid lifting lugs (minimum of four)
- 18" diameter bolted access door in rear of heater
- Coil butt welds receive 100% radiography
- Extra convection section to increase heater efficiency. Economizer (Extra Convection Section) with stack transitions and piping to heater inlet (Crossover piping). Economizer consists of a serpentine carbon steel pipe coil with carbon steel serrated fins. Piping to heater inlet is included (Insulation of piping is not included).

EXHAUST STACK:
An exhaust stack to disperse the heater flue gasses to the atmosphere.
- Stack with flanged bottom connection and 2 flue gas sampling ports, rain cap and bird screen (Un-insulated)

POWER FLAME TYPE LNICM BURNER:
The Induced Flue Gas Recirculation (IFGR) System was developed as a compliment to the Power Flame Forced FGR and Staged Fuel systems in order to encompass a broader spectrum of low NOx emissions demands. The LNICM System incorporates Induced Flue Gas Recirculation technology to reduce the level of NOx emissions. The IFGR inlet assembly is adapted directly to Power Flame's standard gas or gas/oil burner.

The combustion air, thoroughly mixed with a percentage of Flue Gas, is introduced to the combustion zone through the standard burner and burner head assembly. This increased "air side" mass flow for a given heat release provides results very similar to lean combustion but, with less added oxygen to combine with nitrogen to form NOx. The rate of thermal NOx formation is primarily temperature dependent, hence lower resultant NOx formation is achieved by the heat absorption effect of the increased mass flow of combustion air/IFGR mixture in the combustion zone. This increased mass flow results in greater turbulence for the combustion process generally providing shorter, more compact flame envelopes.

- Direct spark ignited natural gas pilot (Interrupted type)
- Ignition transformer
- UV self-checking flame detection scanner
- Blower is integral to burner
- Inlet damper with modulation motor, duct and combustion air differential pressure switch
- Burner is sized for 108% capacity

GAS TRAIN:

- Pilot train with regulator, electric double block safety shutdown valves, manual valve, 1 x pressure gauge
- Main train
- Drip leg
- Manual shutoff valve
- Gas Strainer
- Tee to pilot train
- Pressure gauge x 2
- Stepdown gas regulator (Must be vented to a safe location)
- Gas regulator (Must be vented to a safe location)
- Low and high pressure switches
- Fuel Modulation via modulation valves with linkage-less system
- Double block (one with proof of closure switch) safety shutdown valves
- Bleed line with two (2) manual shutoff valves for leak testing
- Heat tracing, if necessary, is by customer

Heatec/Astec Heater Emissions	
Design Firing Rate (MMBTU/hr) (HHV):	73,037,048
NOx Emission Guarantee (ppmw):	30
CO Emission Guarantee (ppmw):	50
VOC Emission Guarantee (ppmw):	5
UHC Emission Guarantee (ppmw):	15
Nox Emission Guarantee (lb/mmbtu):	0.0365
CO Emission Guarantee (lb/mmbtu):	0.0477
VOC Emission Guarantee (lb/mmbtu):	0.0056
UHC Emission Guarantee (lb/mmbtu):	0.0168
Stack Height (From ground, ft):	24.2
Stack Diamter (ID, ft):	4.0
Flue Gas Flow Rate (SCFH):	994,857
Flue Gas Flow Rate (ACFM):	36,229

1. All emissions are from 50% to 100% of maximum combustion rating (MCR)
2. All emissions in the units of PPM are referenced to 3% dry stack oxygen
3. Emissions are valid for natural gas (fuel analysis must be submitted by customer) combustion only. The values are based on natural gas containing no bound nitrogen and no sulfur
4. If the stack emissions exceed the guarantee level, ASTEC/ Burner manufacturer will work with customer to reduce the emissions to the guaranteed level. ASTEC / Burner manufacturer will, at its costs, make any and all adjustments and / or modifications to burner that it deems appropriate and proper to meet required levels
5. Compliance testing of the system must be conducted within 60 days of initial start-up. Start-up must occur no later than 120 days from shipment. Testing is to be accomplished by an independent authorized agency agreed to by ASTEC / burner manufacturer utilizing EPA-Method 7E. All costs of compliance testing shall be paid by customer
6. All guarantees contained in these conditions and limits shall end following completion of compliance testing wherein all emission test points are documented to be at or below guaranteed levels

LOCALLY MOUNTED INSTRUMENTS:

- Digital differential pressure switch for detection of low thermal fluid flow condition
- Inlet / outlet thermal fluid pressure gauge with isolation valve (NPT)
- Inlet / outlet thermal fluid thermometer with thermo-well (NPT)
- Outlet thermal fluid temperature thermocouples with thermo-well (NPT)
- Stack temperature thermocouple with thermo-well
- ASME Section VIII Type pressure relief valve(s) on the thermal fluid outlet piping (Must be vented to a safe location) 1.5” 300# inlet, 2” 300# flanged outlet
- Conduit will be used for all wiring

BURNER MANAGEMENT SYSTEM (BMS) ELECTRICAL CONTROL ENCLOSURE:
The heater's electrical control enclosure contains all of the electrical components to safely operate the heater. The burner management controller provides the proper burner sequencing, pre-purge, ignition and flame monitoring protection for automatically ignited oil or gas fuel burners. The enclosure also has a single-loop, 4-20mA modulating, digital temperature controller and two digital temperature limit controllers; one for the thermal fluid and one for the stack. The burner managment controller also monitors other heater safety limits in it's limit circuit. If a limit condition occurs, the burner managment controller safely shuts down the burner.

The enclosure and installed components meet NEMA standards. The enclosure is designed and wired to meet the requirments of NFPA 70, National Electric Code (NEC) and the requirements found in Underwriters Laboratories Inc. (UL) 508A Listing for Industrial Control Panels. This listing can be verified on the following website: http://www.ul.com/database.

The BMS control enclosure will be manufactured and tested by ASTEC.

The control panel includes the following:
- AO ground to -24vdc common
- All safety devices connected to DI through relays as input for troubleshooting.
- DI register on HMI page
- LOP (light off position) Hold through MTFI (main trial for ignition) and additional 30 seconds, then release to modulate. Program changes from basic package
- Reset PID PV to Zero at the same time it releases to Auto modulation.
- Heater tied to burner alarm on FAL and FALL shutdown conditions
- Siemens breaker disconnect mounted on back panel with a through-the-door operator handle
- Motor starters are by others
- Fireye BurnerLogix burner management system (BMS) model YB110UVSC with self-check scanner amplifier card. The YB110 has a display with keypad mounted in the enclosure door allowing user to easily scroll through various menus to view the current operating status, review programmer configurations and lockout history. The flame reset button is on the keypad. The YB110 has the capability to communicate its status data via Mod-Bus RTU as a slave with a Mod-Bus RTU master device. Programming of the RTU Master to pole the Fireye is responsibility of the customer. The YB110 BurnerLogix is cUL US Listed, CE and FM approved
- Control relays and fused terminal blocks
- DI, DO & AI fused connections entering and leaving the rack.
- Control relays and fused terminal blocks
- Yokogawa UT35L (1/4 DIN) high thermal fluid temperature limit controller with primary output relay, manual reset, digital display and 4-20mA re-transmission output capability
- Yokogawa UT35L (1/4DIN) high stack temperature limit switch with primary output relay, manual reset, digital display and 4-20mA re-transmission output capability.
- Lights for: power and alarm indicator lights
- Switches for: burner off/on, alarm silence, low fire hold and pump select (if applicable)
- Dry contacts on common alarm and heater run status
- Flame safety reset button
- Emergency shut down button
- Alarm horn, to indicate alarm (mounted adjacent to panel)
- Window kit for indicating controls

- "Z" Purge Package
- Allen-Bradley CompactLogix 5069 PLC with Panelview Plus 12 HMI for air-fuel ratio control.
- Panelview HMI to be updated to latest firmware version and VNC enabled.
- PLC rack and programs to have same version.
- Heating element with panel insulation and thermostat

Exceptions and Clarifications

HEATEC's Quotation is in basic accordance with the specifications, drawings, terms and conditions, and requirements of the invitation to bid; however, the following exceptions have been identified, priced and are attached hereto for consideration
Purchase order must make reference to HEATEC Quotation
Equipment is quoted EXW, HEATEC, Chattanooga, TN, Incoterms® 2020. Equipment will be loaded on truck free of charge. This means the delivery of Equipment on the truck at the specified point of departure (HEATEC) is covered in the quotation price. Purchaser is responsible for the main carriage / freight, cargo insurance and other costs and risks. Purchaser shall furnish all necessary facilities, labor, materials and equipment for unloading and conveying the Equipment to its erection point. The Equipment shall be erected, installed, set and leveled by Purchaser at its expense.
Purchaser shall furnish all necessary labor, materials, equipment, fuel, inert snuffing controls / media, air (if required), nitrogen (if required) and electricity required for starting up the Equipment. HEATEC will not be responsible for the installation or design of the footings, foundations or anchor bolts. Emissions compliance testing, mechanical run test, Site Acceptance Test, and performance tests are not included in Quotation. Testing included in Quotation includes the testing as described in the HEATEC Standard FAT (Available for inspection) and the HEATEC Standard ITP (Available for inspection) and any tests stated in the Quotation.
Heatec warranty, payment terms and cancellation charges are as stated below.
Export packing / preservation / storage are not included. Domestic packing is included. This includes flange / stack covers, wrapping of panel, crating of loose shipped parts.
Taxes, tariffs and duties are not included.
Order will be executed according to USA / TN laws. It is the responsibility of Purchaser to inform HEATEC via specifications of local / jurisdictional laws that may affect Equipment design (i.e. emissions, insurance codes, etc.). Purchaser assumes all responsibility for complying with all federal, state and local statutes, laws, codes, regulations and ordinances in connection with the design, installation and operation of the Equipment and any other activity related thereto, including, without limitation, the Clean Air Act and all rules and regulations promulgated thereunder and the Occupational Safety and Health Act and all rules and regulations promulgated thereunder. Some parts of the heater will exceed OSHA temperature requirements. (Average skin temperature of heater shell is 170°F with 5 mph wind and 70°F ambient.)
Any freight prices that may be quoted are estimates for budgetary purposes only. Due to the volatile nature of freight pricing, HEATEC cannot give a firm price for freight during the proposal phase of the project, because this phase occurs well in advance of the actual delivery. If contracted with HEATEC, freight will be billed at the actual cost plus a 10% handling fee.
All drawings will be standard AUTO-CAD. Delivery time stated in Quotation depends upon the approval process and the changes made during this process. Typical approval time is two weeks after receipt on all drawings. Only those drawings listed above will be offered. Drawings will be submitted electronically. If drawing approval consists of multiple or major changes, delivery time can be affected as well as the price. Drawing period is based on current engineering load and is subject to change without notice. Drawings will be sent via e-mail or provided on disk. Hard copies will require additional cost. Please note that the tolerance of HEATEC drawings is + or – ¼". Construction of connections to heater should allow for modifications to be made in the field with at least 2 degrees of freedom.
Control voltage is as stated in quotation.
Insulation / tracing / personnel protection of piping and equipment external of heater is not included. This is best done in the field by local contractor to eliminate damage during shipment and to allow checking for leaks prior to start up.
Fusible loop system, testing of refractory / insulation materials, burner / blower testing, spreader bar and slings are not included.
Galvanic isolation barriers and cathodic protection are not included.

Single line drawings are not included. HEATEC performs ladder type diagrams.
Pipe, fittings, bolts, nuts and steel will be purchased from HEATEC's standard vendors. Plate and shapes are A36 carbon steel. Tubes supports are 304 SS. Stud bolts are SA 193 Br B7. Nuts are SA 194.
All purchased items will remain as painted from respective vendor.
Ladders and platforms are not included unless stated in Quotation.
If area is Class I Div 2 then panel is NEMA 4X with "Z" type purging. All other controls are NEMA 7, hermetically sealed, intrinsically safe or they are purged. Motors are TEFC. Equipment will be designed to NEC area as stated in Quotation.
Unless stated otherwise in Quotation, HEATEC takes exception to ISO, BS, NACE, API, GOST, ATEX, CE, IEC, SIL, & CENELEC specifications. HEATEC will assist in complying with these regulations where required but HEATEC cannot be sure the equipment as quoted will comply.
Heatec standard Quality control manual will be used for all welding, NDE, etc. Heatec standard welding procedures will be used for all welding. Heatec weld procedures and welders are ASME approved/certified. The weld procedures are available for Purchaser review only and revisions are not allowed. If Purchaser specifications have requirements other than what is listed on Heatec weld procedures, then Purchaser specific weld procedures can be produced. New procedures will result in a cost adder and will delay the original shipping date provided in the HEATEC Quotation. The increase in cost and length of delay will be dependent on the extent of the specification requirements. NDE of non-pressure vessel welds is not included unless stated in Quotation. Non pressure vessel welds are continuous but are not full penetration.
Flame arrestor, spark arrestor, UPS, noise test, fire & gas detection, outdoor lights, aviation lights, variable speed motors, soot blowers, lancing ports, fireproofing, knockout tank, insulation rings, insulation clips, vapor barriers, explosion door, spare parts, thermal fluid, shell / structural / piping stress analysis test, export custom clearance and vibration tests, start-up and erection assistance are not included. Only the controls listed in the Quotation are provided.
Hazardous area electrical equipment certification is simply a copy of each electrical item certificate. The entire heater does not have this type of approval.
Liquidated damages shall not apply.
HEATEC takes exception to specifications and required documentation referring to any other language other than English.
HEATEC is not responsible for implementing documentation or paying taxes, duties or other charges relating to exporting/importing proposed equipment into any country outside the Continental United States
Seal offs (If required) are to be poured in the field by Purchaser.
Relief valves and vents should be piped to a safe location by Purchaser.
Noise data sheet is provided by the blower manufacturer only
Redundancy is not included.
Thermal fluid by-pass, relief valve by-pass, relief valve isolation and flow control is not included unless specifically stated in the Quotation. By-pass and isolation valves around flow control valves and regulators have not been included.
Shield rows in convection section are not required or included.
SAT / Performance test is not included. Functional test of all components is included.
Skid drip pan, lip and grating have not been included.
Rupture discs are not included on relief valves.
Galvanizing of any materials is not included unless stated in Quotation.
PWHT is not included.
API guidelines are not included unless specifically stated in the body of this proposal

API 560 EXCEPTIONS:

ANSI / API STANDARD 560 4TH EDITION AUGUST 2007

SPEC #	EXCEPTION
2	HEATEC TAKES EXCEPTION TO THE FOLLOWING SPECIFICATIONS: ISO, EN, API 673, MSS
5.2	NOISE DATA SHEET IS NOT INCLUDED EXCEPT FOR THE FAN
5.3.3	TUBE SUPPORT DETAILS & CALCULATIONS ARE NOT INCLUDED. DECOKING IS NOT ALLOWED.
5.4	TUBE SUPPORTS ARE NOT CASTINGS AND THEY DO NOT HAVE TEST CERTIFICATES
6.1.3	HEATER IS A TIGHT WOUND HELICAL COIL WITH NEGLIGIBLE TUBE SPACING
6	FLUX RATE, VOLUMTERIC HEAT RELEASE AND H/W RATIO ARE AS STATED IN QUOTATION
6.2.6	HEATER IS A FORCED DRAFT HEATER. NEGATIVE PRESSURES ARE NOT TYPICALLY EXPERIENCED.
6.3.3	SOOTBLOWERS ARE NOT INCLUDED
6.3.2 & 6.3.4	CONVECTION SECTIONS (ECONOMIZER) DOES NOT INCLUDE SPACE FOR FUTURE INSTALLATION OFSOOTBLOWERS, WATERWASHING TUBE ROWS, OR STEAM LANCE DOORS.
6.3.7	SHIELD SECTION IN ECONOMIZER DOES NOT HAVE BARE ROWS OF TUBES
6.3.8	CORBELS / BAFFLES ARE NOT INCLUDED
6.3.9	PLENUM CHAMBER WILL NOT HAVE THE CLEARANCE FROM GRADE SPECIFIED.
6.3.10 & 6.3.11	HEATEC TAKES EXCEPTION TO THIS SPECIFICATION AS IT DOES NOT APPLY TO HELICAL COIL HEATERS
6.3.12	INDIVIDUAL TUBES ARE NOT REPLACEABLE. ENTIRE COIL IS REPLACEABLE.
7.1.2	CORROSION ALLOWANCE FOR TUBE WALL THICKNESS CALCULATIONS IS AS STATED IN THE QUOTATION.
7.1.4	HELICAL COIL HAS CIRCUMFERENTIAL WELDS THRUOUT ITS COIL LENGTH
10	HELICAL COIL TUBE SUPPORTS 304 SS. THIS SECTION DOES NOT APPLY TO HELICAL COILS AND HEATEC TAKES EXCEPTION TO IT.
11.1.5 / 11.4.1	INSULATION TYPE IS AS STATED IN QUOTATION FOR ENTIRE HEATER. NO BRICK OR REFRACTORY IS USED EXCEPT IN THE BURNER BLOCK. STACKS AND DUCTS ARE NOT INSULATED.
11.1.9	HEATEC PROVIDES THERMO CERAM ROPE OR EQUAL AROUND BURNER THROAT. NO EXPANSION JOINT IS REQUIRED.
11.4	CERAMIC FIBER BLANKET IS 6 LB/FT^3 WITH 310 SS PINS AND WASHERS. CERAMIC FIBER MODULES ARE 8 OR 10 LB/FT^3 WITH 304 OR 316 SS ANCHOR SYSTEM. RETAINER CUPS ARE NOT UTILIZED.
11.4.8	FLUE GAS VELOCITY AA STATED IN THE QUOTATION MAY EXCEED THIS SPECIFICATION

12.2.7	FIREPROOFING IS NOT INCLUDED
12.3	HEADER BOX IS BOLTED. PLUG HEADERS ARE NOT UTILIZED.
12.3.2.1 / 12.3.2.2	ONLY ONE 18" DIAMETER RADIANT SECTION ACCESS DOOR IS PROVIDED. IT IS BOLTED. IT IS IN THE REAR COVER OF HORIZONTAL HEATERS AND THE TOP COVER OF VERTICAL HEATERS. BURNER DESIGN DOES NOT HAVE AIR PLENUM DESIGN, IT IS SIMPLY A BLOWER WITH DAMPER AND DUCT. IT HAS NO ACCESS DOOR OR PORT.
12.3.2.3 / 12.3.2.4 / 12.3.2.6	DAMPER IS PROVIDED IN COMBUSTION AIR DUCT ONLY. ACCESS DOOR BEFORE ABD AFTER CONVECTION SECTION IS NOT INCLUDED. INDIVIUAL TUBES ARE NOT REPLACEABLE. ENTIRE COIL IS REPLACEABLE. END COVERS OF HEATER ARE REMOVED FOR THIS PURPOSE. TUBE REMOVAL DOOR IS NOT INCLUDED. DUCTS AND DAMPERS DO NOT HAVE ACCESS DOORS.
13.2.2 / 13.2.7 / 13.2.8	STACK IS SEAL WELDED EXTERNALLY ONLY. STACK IS NOT LINED.
13.2.12	BREECHING WILL NOT MEET CLEARANCE SPECIFICATIONS
13.2.15	STACK DOES NOT HAVE A CORROSION ALLOWANCE.
14.1.3	BURNER MAY NOT MEET SPECIFIED CLEARANCES
14.1.8	A SINGLE BURNER IS USED ONLY
14.1.21	IF BURNER IS OIL FIRED. THE OIL GUN IS NOT REMMOVABLE DURING OPERATION. MATERIALS OF CONSTRUCTION MAY NOT MEET ALL REQUIREMENTS IN TABLE 15.
14.2	SOOTBLOWERS, PORTS AND LANES ARE NOT INCLUDED UNLESS STATED IN QUOTATION.
14.3	FANS AND DRIVERS WILL NOT MEET API REQUIREMENTS
14.4	HEATEC USES BUTTERFLY DAMPERS AND RADIAL DAMPERS IN THE COMBUSTION AIR DUCT. THEY ARE MILD STEEL CONSTRUCTION.
15	FLUE GAS AND COMBUSTION AIR CONNECTIONS ARE SCH 40 NPT CONNECTIONS.
15.3.2	VENT AND DRAIN CONNECTIONS ARE NOT INCLUDED
15.4	TUBE SKIN THERMOCOUPLES ARE NOT INCLUDED UNLESS STATED IN QUOTATION.
15.5	INSTRUMENT CONNECTIONS ARE NOT NECESSARILY ACCESSIBLE FROM GRADE.
16.2	PLATE WELDS ARE SEAMLESSLY WELDED ON THE EXTERIOR
16.7	FIELD ERECTION / ASSISTANCE ARE NOT INCLUDED.
17.3 17.4	HEATEC TAKES EXCEPTION TO 17.3 & 17.4
ANNEX E	STRESS CALCULATIONS ARE NOT PERFORMED ON TUBES, SHELL OR TUBE SUPPORTS.
ANNEX F	AIR PREHEATER IS NOT INCLUDED.

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July 22, 2025 ASTEC PROPOSAL #: HI 23-15004 Rev 5

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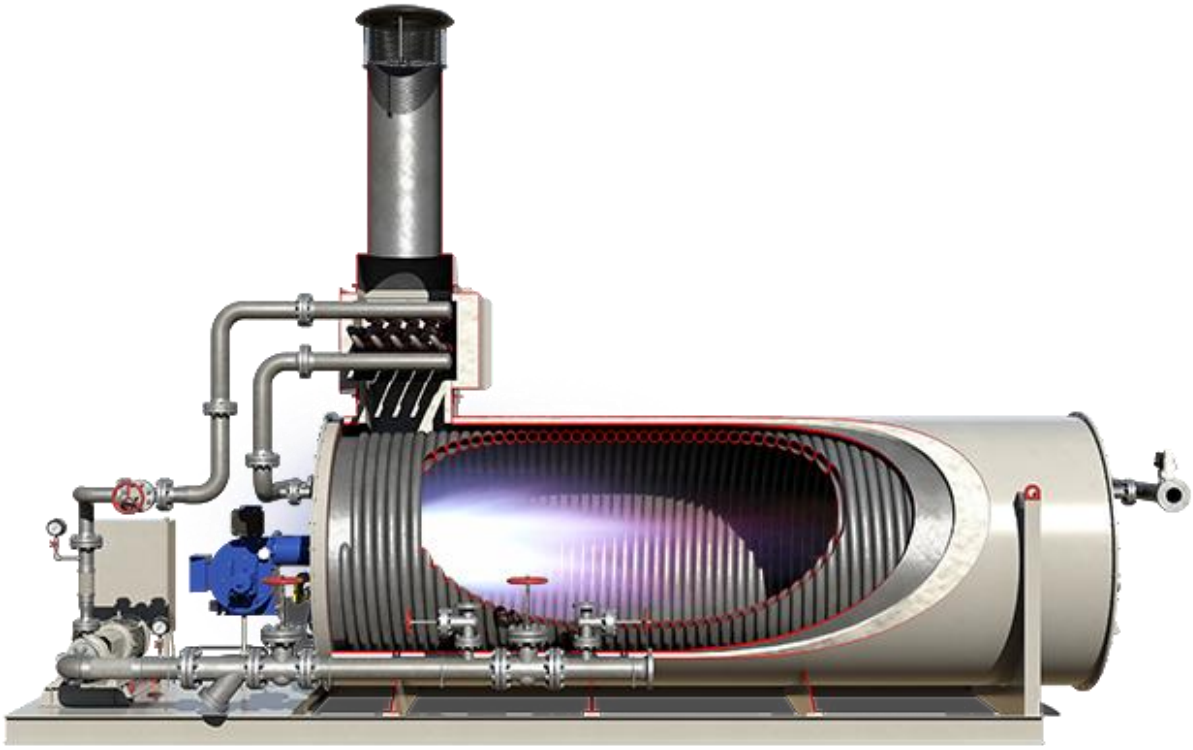
H-1704 HMO for Targa's DOU Copperhead plant in NM

PREPARED EXCLUSIVELY FOR

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This is a cut away depiction of our standard horizontal heater internals. It does not necessarily represent the package quoted. The main advantage of this design is the extremely large radiant section. Since this is where most heat transfer occurs, the ideal design utilizes a large radiant section. The two-pass heater life expectancy is 2-4 times that of other styles.

ASTEC ADVANTAGES:

1. The radiant heating surface of two pass heaters is typically 50% greater compared to that of other style heaters. The result is that the two-pass heater will have lower radiant flux rates. High radiant heat flux causes high metal wall temperatures, causing premature coil failure and premature degradation of the thermal fluid. The life expectancy of the two-pass heater will be 2-4 times that of other designs
2. Should the coil ever have to be replaced, the bolted cover(s) of the two-pass design allow(s) for easy coil replacement without having to replace the entire heater or requiring shipment back to the factory for costly repair
3. There is more internal “room” in the less crowded two pass heater which allows for greater space between the flame and the coil. This lessens the chances for flame impingement and thus lengthens coil and thermal fluid life. Ease of inspection is also increased
4. The velocity in the coil is in the range of 5 – 13 fps as recommended by most thermal fluid manufacturers. Due to the low average radiant heat flux of the two pass designs, the heater does not have to rely on excessive fluid velocity (which can lead to erosion) to keep the film temperatures low. The result is the most forgiving heater on the market
5. The heater has an 18” bolted man-way. This allows access to the radiant section without removing the cover, the burner, the fuel train, the can and the conduit. This internal inspection is required in many locations
6. The heater utilizes complete flow through a uniform diameter coil without mixing or by-passing.
7. Front and rear peep sight(s) for viewing flame pattern and coil condition
8. No orifice plates required for balancing the flow
9. Insulation is on the inside of the heater where it cannot be damaged during shipment
10. Totally Packaged Heaters
11. In House Panel Shop
12. In House Coil Manufacturing
13. In House Hydro-Test
14. In House Painting / Sandblasting
15. In House Fully Function Tested Heaters
16. Custom (Highly Specified or Standard Units)
17. On Site Training
18. In House Service Department which is available for on-site training and start up
19. In House Engineering Department
20. Seventeen AutoCAD stations utilizing AutoCAD / Inventor / AutoCAD Electrical
21. In House Quality Assurance / Control Department
22. Heater manufacturer since 1977
23. Heatec Coil warranty will be 3 years from ship date. Typical lifetime of this heater without coil replacement is 20 to 30 years
24. Stamps and Certifications

EQUIPMENT DESIGN DATA:

HCI 12010-40-D-G	IP UNITS	SI UNITS
Heater Capacity (Btu/hr) (MW)	27,077,949	7.94
Firing Rate (HHV) (Btu/hr) (MW)	35,658,161	10.45
Heater Circulation Rate (lb/hr) (kg/hr) {Constant}	224,977	102,021
Heater Circulation Rate (Gal/min) (m^3/hr) {Constant}	544	124
Minimum Allowable Circulation Rate (Gal/min) (m^3/hr)	435	99
Heater Inlet Temperature (°F) (°C)	275	135
Heater Outlet Temperature (°F) (°C)	475	246
Stack Temperature (°F) (°C)	600	315
Calculated Heater Efficiency (%) (LHV) [See Note 1]	84.3	84.3
Calculated ΔP through Heater (psid) (Bar) (Clean)	16.5	1.1
Heater Volume (Gallons) (m^3)	1,029	3.9
Total Coil Surface Area (ft^2) (m^2)	3,861	358.8
Overall Flux Rate (Btu/hr-ft^2) (kW/m^2)	7,013	22.1
Radiant Surface Area (ft^2) (m^2)	837	77.8
Average Radiant Flux Rate (Btu/hr-ft^2) (kW/m^2)	17,662	55.7
Maximum Radiant Flux Rate (Btu/hr-ft^2) (kW/m^2) AICHE	23,843	75.2
Maximum Metal Temperature (°F) (°C) AICHE	598	314
Maximum Calculated Film Temperature (°F) (°C) AICHE	581	305
Average Thermal Fluid Velocity (ft/s) (m/s)	7.2	2.2
Combustion Air Flow Rate (sFt^3/hr) (Nm^3/hr)	392,277	11,110
Combustion Gas Flow Rate (sFt^3/hr) (Nm^3/hr)	35,805	1,014
Flue Gas Flow Rate (sFt^3/hr) (Nm^3/hr)	429,777	12,172
Flue Gas Pressure Drop (" WC) (mmHg)	0.51	26.47

Note 1: Based on HHV of typical natural gas. Guaranteed efficiency is 1% less.

SYSTEM PARAMETERS:

The following system parameters are incorporated into this proposal.

Plant location	New Mexico
Plant elevation (fasl)	3,500
Heater location	Outdoor
Ambient Temperature (ºF)	0 to 105
Burner turndown	5:1 Gas
Excess air %	15
Noise Limit (dB(A))	< 85 at 1 m
Heater orientation	Horizontal
Primary fuel (psig @ rated capacity of the burner)	Fuel gas (125)
Compressed air from clean, dry, safe source	10 to 40 scfm @ 116 to 80 psig
Electrical	480 V / 3 PH / 60 Hz
Control voltage	110 V / 1 PH / 60 HZ / 24 V DC
Area Classification	Class 1 Div. 2 Group C & D
Thermal fluid (Not Included)	Chemtherm 550 or Equal

	FUEL TABLE	MOL %
N_2	Nitrogen	1.84
H_2O	Water	0.00
H_2	Hydrogen	0.00
H_2S	Hydrogen Sulfide	0.00001
CO_2	Carbon Dioxide	0.00
CO	Carbon Monoxide	0.00
CH_4	Methane	97.6
C_2H_6	Ethane	0.54
C_3H_8	Propane	0.0235
C_4H_{10}	i-Butane	0.00
C_4H_{10}	n-Butane	0.00
C_5H_{12}	i-Pentane	0.00
C_5H_{12}	n-Pentane	0.00
C_6H_{14}	n-Hexane	0.00
O_2	Oxygen	0.00

THERMAL FLUID PROPERTIES	
Inlet Temperature (°F)	275.4
Inlet Density (lb/ft^3)	51.54
Inlet Heat Capacity (Btu/(lb*°F))	0.555
Inlet Thermal Conductivity (Btu/(h*ft*°F))	0.071
Inlet Dynamic Viscosity (cP)	1.872
Outlet Temperature (°F)	475
Outlet Density (lb/ft^3)	47.17
Outlet Heat Capacity (Btu/(lb*°F))	0.651
Outlet Thermal Conductivity (Btu/(h*ft*°F))	0.066
Outlet Dynamic Viscosity (cP)	0.692

APPROXIMATE PHYSICAL DATA:

The equipment will have the following estimated dimensions and dry weights. Piping and controls external to the heater are to be insulated in the field by customer. All equipment will be assembled and mounted as stated below. Items too large for shipment, or subject to damage during shipment, will be shipped loose (unattached) and will require re-assembly in the field.

Equipment	L (ft)	W (ft)	H (ft)	Wt (Lbs)	Mounting
Horizontal Heater	34.5	10.0	10.3	42,092	Skid
Economizer	9.5	4.7	2.8	5,630	Top of Heater
Exhaust Stack		2.5	8.0	643	Top of Economizer
Blower (HP)	50	TEFC			Front Cover of Heater
Pilot Gas Train	NPT	0.5	Inch		Side of Heater
Main Gas Train	NPT	2.5	Inch		Side of Heater
Control Panel	3.0	1.0	4.0	500	Front of Heater Skid

DRAWINGS / ENGINEERING:

Drawing period is based on current engineering load and is subject to change without notice. Drawings will be sent via e-mail or provided on USB thumb drive (AutoCAD). Please note that the tolerance of our drawings is + or – ¼". Construction of connections to heater should allow for modifications to be made in the field with at least 2 degrees of freedom.

Description	Description
Manuals on CD	General Arrangement
P & ID	Bill of Material Mechanical
Electrical Diagrams (Ladder Type)	Bill of Material Electrical
Nameplate Details	Hydro-test Report
Lift Lug Details	Spare Parts
Motor Curves	NDT Reports
Motor Data Sheets	Utility Requirements
Material Certifications	Quality Control Manual
Foundation Loadings	Mechanical Design Calculations

DESIGN CRITERIA:
The equipment will be designed to the requirements stated below. Quality is assured by our in house quality control department. Thickness of coil and shell will not be affected by the manufacturing process as we keep all diameters above the limits that would have an impact on it. Hydrostatic testing will be carried out at our facility and witnessed by our quality control manager.

Heater Coil Design:
ASME Section VIII design @ 650 ºF to -20 ºF, @ 300 psig with CA = 0.0625
Heater Shell Design:
Non-code design @ 300 ºF to -20 ºF @ 15 In W.C. with CA = 0.0625
Fuel Train Design:
105 ºF to 0 ºF / UL / NFPA 87 & 70
Heater Stack Design:
Non-code 800 ºF to -20 ºF @ +15” W.C. w/ CA = .0625
Panel & Controls:
105 ºF to 0 ºF / UL 508 A / NFPA 87 & 70
NEC Class I Division 2 Group C & D T3
NEMA 4X (316 Stainless Steel) with “Z” type purging
Junction Box Enclosure:
NEMA 4X (316 Stainless Steel)
Ignition Transformer Enclosure:
NEMA 4X (316 Stainless Steel)

PAINTING:
Customer specified paint system.

Purchased items will be painted with vendors’ standard paint, stainless items will remain unpainted.

EQUIPMENT RECOMMENDATIONS:
The heater is designed, manufactured, wired, and tested at our facility in Chattanooga, Tennessee USA. It is completely packaged and will include the following:

HEATEC HCI HEATER:
- Two-pass tight-wound helical coil heater
- Carbon steel (SA106 Gr. B seamless) schedule 40 tight-wound helical coil
- Single 6" inlet and outlet 300 # (SA105) flanges
- Heater coil hydro-testing per ASME code
- Coil will be stamped and receive National Board Registration
- 304 SS coil supports (skip welded to shell to help dissipate heat transmission)
- Coil is enclosed by an (minimum ¼" thick) A36 carbon steel shell with bolted end covers (w/ lift eyes)
- Internally insulated with ceramic fiber blanket, using welded 310 SS pins with washers for support. Blanket will receive a coat of rigidizer
- Peep sight in rear cover
- Inert gas smothering connection in front cover. (Gas and controls by others)
- Structural steel skid with saddles welded to channels to form a skid mounted frame, and a five foot skid deck extension for mounting controls
- Skid lifting lugs (minimum of four)
- 18" diameter bolted access door in rear of heater
- Coil butt welds receive 100% radiography
- Extra convection section to increase heater efficiency. Economizer (Extra Convection Section) with stack transitions and piping to heater inlet (Crossover piping). Economizer consists of a serpentine carbon steel pipe coil with carbon steel serrated fins. Piping to heater inlet is included (Insulation of piping is not included).

EXHAUST STACK:
An exhaust stack to disperse the heater flue gasses to the atmosphere.
- Stack with flanged bottom connection and 2 flue gas sampling ports, rain cap and bird screen (Un-insulated)

POWER FLAME TYPE EVO BURNER:
The Power Flame EVO™ burner offers staged/premix combustion technology to maximize operating efficiency and reduce NOx emission on natural gas firing below 30 PPM without the use of flue gas recirculation (FGR). Designed to fire a range of gaseous fuels and light oil, this burner utilizes a unique firing head design which provides stable combustion over a wide turndown.
- Direct spark ignited natural gas pilot (Interrupted type)
- Ignition transformer
- UV self-checking flame detection scanner
- Blower is integral to burner
- Inlet damper with modulation motor, duct and combustion air pressure switch
- Burner is sized for 101% capacity

GAS TRAIN:

- Pilot train: regulator, electric double block safety shutdown valves, manual valve, pressure gauge
- Main train
- Drip leg
- Manual shutoff valve
- Gas Strainer
- Tee to pilot train
- Pressure gauge x 2
- Stepdown gas regulator (Must be vented to a safe location)
- Gas regulator (Must be vented to a safe location)
- Low and high pressure switches
- Fuel Modulation via modulation valves with linkage-less system
- Double block (one with proof of closure switch) safety shutdown valves
- Bleed line with two (2) manual shutoff valves for leak testing
- Heat tracing, if necessary, is by customer

Heatec/Astec Heater Emissions	
Design Firing Rate (MMBTU/hr) (HHV):	35,658,161
NOx Emission Guarantee (ppmw):	30
CO Emission Guarantee (ppmw):	50
VOC Emission Guarantee (ppmw):	5
UHC Emission Guarantee (ppmw):	15
Nox Emission Guarantee (lb/mmbtu):	0.0365
CO Emission Guarantee (lb/mmbtu):	0.0477
VOC Emission Guarantee (lb/mmbtu):	0.0056
UHC Emission Guarantee (lb/mmbtu):	0.0168
Stack Height (From ground, ft):	21.1
Stack Diamter (ID, ft):	2.5
Flue Gas Flow Rate (SCFH):	429,777
Flue Gas Flow Rate (ACFM):	14,596

1. All emissions are from 50% to 100% of maximum combustion rating (MCR)
2. All emissions in the units of PPM are referenced to 3% dry stack oxygen
3. Emissions are valid for natural gas (fuel analysis must be submitted by customer) combustion only. The values are based on natural gas containing no bound nitrogen and no sulfur
4. If the stack emissions exceed the guarantee level, ASTEC/ Burner manufacturer will work with customer to reduce the emissions to the guaranteed level. ASTEC / Burner manufacturer will, at its costs, make any and all adjustments and / or modifications to burner that it deems appropriate and proper to meet required levels
5. Compliance testing of the system must be conducted within 60 days of initial start-up. Start-up must occur no later than 120 days from shipment. Testing is to be accomplished by an independent authorized agency agreed to by ASTEC / burner manufacturer utilizing EPA-Method 7E. All costs of compliance testing shall be paid by customer
6. All guarantees contained in these conditions and limits shall end following completion of compliance testing wherein all emission test points are documented to be at or below guaranteed levels

LOCALLY MOUNTED INSTRUMENTS:

- Digital differential pressure switch for detection of low thermal fluid flow condition
- Inlet / outlet thermal fluid pressure gauge with isolation valve (NPT)
- Inlet / outlet thermal fluid thermometer with thermo-well (NPT)
- Outlet thermal fluid temperature thermocouples with thermo-well (NPT)
- Stack temperature thermocouple with thermo-well
- ASME Section VIII Type pressure relief valve(s) on the thermal fluid outlet piping (Must be vented to a safe location) 1.5" 300# inlet, 2" 300# flanged outlet
- Conduit will be used for all wiring

BURNER MANAGEMENT SYSTEM (BMS) ELECTRICAL CONTROL ENCLOSURE:

The heater's electrical control enclosure contains all of the electrical components to safely operate the heater. The burner management controller provides the proper burner sequencing, pre-purge, ignition and flame monitoring protection for automatically ignited oil or gas fuel burners. The enclosure also has a single-loop, 4-20mA modulating, digital temperature controller and two digital temperature limit controllers; one for the thermal fluid and one for the stack. The burner managment controller also monitors other heater safety limits in it's limit circuit. If a limit condition occurs, the burner managment controller safely shuts down the burner.

The enclosure and installed components meet NEMA standards. The enclosure is designed and wired to meet the requirments of NFPA 70, National Electric Code (NEC) and the requirements found in Underwriters Laboratories Inc. (UL) 508A Listing for Industrial Control Panels. This listing can be verified on the following website: http://www.ul.com/database.

The BMS control enclosure will be manufactured and tested by ASTEC.

The control panel includes the following:

- AO ground to -24vdc common
- All safety devices connected to DI through relays as input for troubleshooting.
- DI register on HMI page
- LOP (light off position) Hold through MTFI (main trial for ignition) and additional 30 seconds, then release to modulate. Program changes from basic package
- Reset PID PV to Zero at the same time it releases to Auto modulation.
- Heater tied to burner alarm on FAL and FALL shutdown conditions
- Siemens breaker disconnect mounted on back panel with a through-the-door operator handle
- Motor starters are by others
- Fireye BurnerLogix burner management system (BMS) model YB110UVSC with self-check scanner amplifier card. The YB110 has a display with keypad mounted in the enclosure door allowing user to easily scroll through various menus to view the current operating status, review programmer configurations and lockout history. The flame reset button is on the keypad. The YB110 has the capability to communicate its status data via Mod-Bus RTU as a slave with a Mod-Bus RTU master device. Programming of the RTU Master to pole the Fireye is responsibility of the customer. The YB110 BurnerLogix is cUL US Listed, CE and FM approved
- Control relays and fused terminal blocks
- DI, DO & AI fused connections entering and leaving the rack.
- Control relays and fused terminal blocks
- Yokogawa UT35L (1/4 DIN) high thermal fluid temperature limit controller with primary output relay, manual reset, digital display and 4-20mA re-transmission output capability

- Yokogawa UT35L (1/4DIN) high stack temperature limit switch with primary output relay, manual reset, digital display and 4-20mA re-transmission output capability.
- Lights for: power and alarm indicator lights
- Switches for: burner off/on, alarm silence, low fire hold and pump select (if applicable)
- Dry contacts on common alarm and heater run status
- Flame safety reset button
- Emergency shut down button
- Alarm horn, to indicate alarm (mounted adjacent to panel)
- Window kit for indicating controls
- “Z” Purge Package
- Allen-Bradley CompactLogix 5069 PLC with Panelview Plus 12 HMI for air-fuel ratio control.
- Panelview HMI to be updated to latest firmware version and VNC enabled.
- PLC rack and programs to have same version.
- Heating element with panel insulation and thermostat

Exceptions and Clarifications

HEATEC's Quotation is in basic accordance with the specifications, drawings, terms and conditions, and requirements of the invitation to bid; however, the following exceptions have been identified, priced and are attached hereto for consideration
Purchase order must make reference to HEATEC Quotation
Equipment is quoted EXW, HEATEC, Chattanooga, TN, Incoterms® 2020. Equipment will be loaded on truck free of charge. This means the delivery of Equipment on the truck at the specified point of departure (HEATEC) is covered in the quotation price. Purchaser is responsible for the main carriage / freight, cargo insurance and other costs and risks. Purchaser shall furnish all necessary facilities, labor, materials and equipment for unloading and conveying the Equipment to its erection point. The Equipment shall be erected, installed, set and leveled by Purchaser at its expense.
Purchaser shall furnish all necessary labor, materials, equipment, fuel, inert snuffing controls / media, air (if required), nitrogen (if required) and electricity required for starting up the Equipment. HEATEC will not be responsible for the installation or design of the footings, foundations or anchor bolts. Emissions compliance testing, mechanical run test, Site Acceptance Test, and performance tests are not included in Quotation. Testing included in Quotation includes the testing as described in the HEATEC Standard FAT (Available for inspection) and the HEATEC Standard ITP (Available for inspection) and any tests stated in the Quotation.
Heatec warranty, payment terms and cancellation charges are as stated below.
Export packing / preservation / storage are not included. Domestic packing is included. This includes flange / stack covers, wrapping of panel, crating of loose shipped parts.
Taxes, tariffs and duties are not included.
Order will be executed according to USA / TN laws. It is the responsibility of Purchaser to inform HEATEC via specifications of local / jurisdictional laws that may affect Equipment design (i.e. emissions, insurance codes, etc.). Purchaser assumes all responsibility for complying with all federal, state and local statutes, laws, codes, regulations and ordinances in connection with the design, installation and operation of the Equipment and any other activity related thereto, including, without limitation, the Clean Air Act and all rules and regulations promulgated thereunder and the Occupational Safety and Health Act and all rules and regulations promulgated thereunder. Some parts of the heater will exceed OSHA temperature requirements. (Average skin temperature of heater shell is 170°F with 5 mph wind and 70°F ambient.)
Any freight prices that may be quoted are estimates for budgetary purposes only. Due to the volatile nature of freight pricing, HEATEC cannot give a firm price for freight during the proposal phase of the project, because this phase occurs well in advance of the actual delivery. If contracted with HEATEC, freight will be billed at the actual cost plus a 10% handling fee.
All drawings will be standard AUTO-CAD. Delivery time stated in Quotation depends upon the approval process and the changes made during this process. Typical approval time is two weeks after receipt on all drawings. Only those drawings listed above will be offered. Drawings will be submitted electronically. If drawing approval consists of multiple or major changes, delivery time can be affected as well as the price. Drawing period is based on current engineering load and is subject to change without notice. Drawings will be sent via e-mail or provided on disk. Hard copies will require additional cost. Please note that the tolerance of HEATEC drawings is + or – ¼". Construction of connections to heater should allow for modifications to be made in the field with at least 2 degrees of freedom.
Control voltage is as stated in quotation.
Insulation / tracing / personnel protection of piping and equipment external of heater is not included. This is best done in the field by local contractor to eliminate damage during shipment and to allow checking for leaks prior to start up.
Fusible loop system, testing of refractory / insulation materials, burner / blower testing, spreader bar and slings are not included.
Galvanic isolation barriers and cathodic protection are not included.
Single line drawings are not included. HEATEC performs ladder type diagrams.

Pipe, fittings, bolts, nuts and steel will be purchased from HEATEC's standard vendors. Plate and shapes are A36 carbon steel. Tubes supports are 304 SS. Stud bolts are SA 193 Br B7. Nuts are SA 194.
All purchased items will remain as painted from respective vendor.
Ladders and platforms are not included unless stated in Quotation.
If area is Class I Div 2 then panel is NEMA 4X with "Z" type purging. All other controls are NEMA 7, hermetically sealed, intrinsically safe or they are purged. Motors are TEFC. Equipment will be designed to NEC area as stated in Quotation.
Unless stated otherwise in Quotation, HEATEC takes exception to ISO, BS, NACE, API, GOST, ATEX, CE, IEC, SIL, & CENELEC specifications. HEATEC will assist in complying with these regulations where required but HEATEC cannot be sure the equipment as quoted will comply.
Heatec standard Quality control manual will be used for all welding, NDE, etc. Heatec standard welding procedures will be used for all welding. Heatec weld procedures and welders are ASME approved/certified. The weld procedures are available for Purchaser review only and revisions are not allowed. If Purchaser specifications have requirements other than what is listed on Heatec weld procedures, then Purchaser specific weld procedures can be produced. New procedures will result in a cost adder and will delay the original shipping date provided in the HEATEC Quotation. The increase in cost and length of delay will be dependent on the extent of the specification requirements. NDE of non-pressure vessel welds is not included unless stated in Quotation. Non pressure vessel welds are continuous but are not full penetration.
Flame arrestor, spark arrestor, UPS, noise test, fire & gas detection, outdoor lights, aviation lights, variable speed motors, soot blowers, lancing ports, fireproofing, knockout tank, insulation rings, insulation clips, vapor barriers, explosion door, spare parts, thermal fluid, shell / structural / piping stress analysis test, export custom clearance and vibration tests, start-up and erection assistance are not included. Only the controls listed in the Quotation are provided.
Hazardous area electrical equipment certification is simply a copy of each electrical item certificate. The entire heater does not have this type of approval.
Liquidated damages shall not apply.
HEATEC takes exception to specifications and required documentation referring to any other language other than English.
HEATEC is not responsible for implementing documentation or paying taxes, duties or other charges relating to exporting/importing proposed equipment into any country outside the Continental United States
Seal offs (If required) are to be poured in the field by Purchaser.
Relief valves and vents should be piped to a safe location by Purchaser.
Noise data sheet is provided by the blower manufacturer only
Redundancy is not included.
Thermal fluid by-pass, relief valve by-pass, relief valve isolation and flow control is not included unless specifically stated in the Quotation. By-pass and isolation valves around flow control valves and regulators have not been included.
Shield rows in convection section are not required or included.
SAT / Performance test is not included. Functional test of all components is included.
Skid drip pan, lip and grating have not been included.
Rupture discs are not included on relief valves.
Galvanizing of any materials is not included unless stated in Quotation.
PWHT is not included.
API guidelines are not included unless specifically stated in the body of this proposal

API 560 EXCEPTIONS:

ANSI / API STANDARD 560 4TH EDITION AUGUST 2007

SPEC #	EXCEPTION
2	HEATEC TAKES EXCEPTION TO THE FOLLOWING SPECIFICATIONS: ISO, EN, API 673, MSS
5.2	NOISE DATA SHEET IS NOT INCLUDED EXCEPT FOR THE FAN
5.3.3	TUBE SUPPORT DETAILS & CALCULATIONS ARE NOT INCLUDED. DECOKING IS NOT ALLOWED.
5.4	TUBE SUPPORTS ARE NOT CASTINGS AND THEY DO NOT HAVE TEST CERTIFICATES
6.1.3	HEATER IS A TIGHT WOUND HELICAL COIL WITH NEGLIGIBLE TUBE SPACING
6	FLUX RATE, VOLUMTERIC HEAT RELEASE AND H/W RATIO ARE AS STATED IN QUOTATION
6.2.6	HEATER IS A FORCED DRAFT HEATER. NEGATIVE PRESSURES ARE NOT TYPICALLY EXPERIENCED.
6.3.3	SOOTBLOWERS ARE NOT INCLUDED
6.3.2 & 6.3.4	CONVECTION SECTIONS (ECONOMIZER) DOES NOT INCLUDE SPACE FOR FUTURE INSTALLATION OFSOOTBLOWERS, WATERWASHING TUBE ROWS, OR STEAM LANCE DOORS.
6.3.7	SHIELD SECTION IN ECONOMIZER DOES NOT HAVE BARE ROWS OF TUBES
6.3.8	CORBELS / BAFFLES ARE NOT INCLUDED
6.3.9	PLENUM CHAMBER WILL NOT HAVE THE CLEARANCE FROM GRADE SPECIFIED.
6.3.10 & 6.3.11	HEATEC TAKES EXCEPTION TO THIS SPECIFICATION AS IT DOES NOT APPLY TO HELICAL COIL HEATERS
6.3.12	INDIVIDUAL TUBES ARE NOT REPLACEABLE. ENTIRE COIL IS REPLACEABLE.
7.1.2	CORROSION ALLOWANCE FOR TUBE WALL THICKNESS CALCULATIONS IS AS STATED IN THE QUOTATION.
7.1.4	HELICAL COIL HAS CIRCUMFERENTIAL WELDS THRUOUT ITS COIL LENGTH
10	HELICAL COIL TUBE SUPPORTS 304 SS. THIS SECTION DOES NOT APPLY TO HELICAL COILS AND HEATEC TAKES EXCEPTION TO IT.
11.1.5 / 11.4.1	INSULATION TYPE IS AS STATED IN QUOTATION FOR ENTIRE HEATER. NO BRICK OR REFRACTORY IS USED EXCEPT IN THE BURNER BLOCK. STACKS AND DUCTS ARE NOT INSULATED.
11.1.9	HEATEC PROVIDES THERMO CERAM ROPE OR EQUAL AROUND BURNER THROAT. NO EXPANSION JOINT IS REQUIRED.
11.4	CERAMIC FIBER BLANKET IS 6 LB/FT^3 WITH 310 SS PINS AND WASHERS. CERAMIC FIBER MODULES ARE 8 OR 10 LB/FT^3 WITH 304 OR 316 SS ANCHOR SYSTEM. RETAINER CUPS ARE NOT UTILIZED.
11.4.8	FLUE GAS VELOCITY AA STATED IN THE QUOTATION MAY EXCEED THIS SPECIFICATION
12.2.7	FIREPROOFING IS NOT INCLUDED
12.3	HEADER BOX IS BOLTED. PLUG HEADERS ARE NOT UTILIZED.

12.3.2.1 / 12.3.2.2	ONLY ONE 18" DIAMETER RADIANT SECTION ACCESS DOOR IS PROVIDED. IT IS BOLTED. IT IS IN THE REAR COVER OF HORIZONTAL HEATERS AND THE TOP COVER OF VERTICAL HEATERS. BURNER DESIGN DOES NOT HAVE AIR PLENUM DESIGN, IT IS SIMPLY A BLOWER WITH DAMPER AND DUCT. IT HAS NO ACCESS DOOR OR PORT.
12.3.2.3 / 12.3.2.4 / 12.3.2.6	DAMPER IS PROVIDED IN COMBUSTION AIR DUCT ONLY. ACCESS DOOR BEFORE ABD AFTER CONVECTION SECTION IS NOT INCLUDED. INDIVIUAL TUBES ARE NOT REPLACEABLE. ENTIRE COIL IS REPLACEABLE. END COVERS OF HEATER ARE REMOVED FOR THIS PURPOSE. TUBE REMOVAL DOOR IS NOT INCLUDED. DUCTS AND DAMPERS DO NOT HAVE ACCESS DOORS.
13.2.2 / 13.2.7 / 13.2.8	STACK IS SEAL WELDED EXTERNALLY ONLY. STACK IS NOT LINED.
13.2.12	BREECHING WILL NOT MEET CLEARANCE SPECIFICATIONS
13.2.15	STACK DOES NOT HAVE A CORROSION ALLOWANCE.
14.1.3	BURNER MAY NOT MEET SPECIFIED CLEARANCES
14.1.8	A SINGLE BURNER IS USED ONLY
14.1.21	IF BURNER IS OIL FIRED. THE OIL GUN IS NOT REMMOVABLE DURING OPERATION. MATERIALS OF CONSTRUCTION MAY NOT MEET ALL REQUIREMENTS IN TABLE 15.
14.2	SOOTBLOWERS, PORTS AND LANES ARE NOT INCLUDED UNLESS STATED IN QUOTATION.
14.3	FANS AND DRIVERS WILL NOT MEET API REQUIREMENTS
14.4	HEATEC USES BUTTERFLY DAMPERS AND RADIAL DAMPERS IN THE COMBUSTION AIR DUCT. THEY ARE MILD STEEL CONSTRUCTION.
15	FLUE GAS AND COMBUSTION AIR CONNECTIONS ARE SCH 40 NPT CONNECTIONS.
15.3.2	VENT AND DRAIN CONNECTIONS ARE NOT INCLUDED
15.4	TUBE SKIN THERMOCOUPLES ARE NOT INCLUDED UNLESS STATED IN QUOTATION.
15.5	INSTRUMENT CONNECTIONS ARE NOT NECESSARILY ACCESSIBLE FROM GRADE.
16.2	PLATE WELDS ARE SEAMLESSLY WELDED ON THE EXTERIOR
16.7	FIELD ERECTION / ASSISTANCE ARE NOT INCLUDED.
17.3 17.4	HEATEC TAKES EXCEPTION TO 17.3 & 17.4
ANNEX E	STRESS CALCULATIONS ARE NOT PERFORMED ON TUBES, SHELL OR TUBE SUPPORTS.
ANNEX F	AIR PREHEATER IS NOT INCLUDED.

SALES PROPOSAL
SPECIFIC TERMS AND CONDITIONS

PARTIES: - Heatec, Inc. shall be referred to as "**Heatec**" in this Sales Proposal.
- Good Customer shall be referred to as "**Purchaser**" in this Sales Proposal.

PRICING:
- The Price is valid for sixty (60) days after date of this Sales Proposal.
- The Prices do not include any sale, use, property value added, duties or other taxes or charges, whether federal, state, local or provincial that may be applicable, which shall be the responsibility of the Purchaser.

TERMS:
- Purchaser shall pay the purchase price in progress payments as follows:
  Receipt of these progress payments is required before the Equipment will be released for shipment.
    20% @ ARO
    30% @ Approval Drawing Submittal
    30% @ Coil Hydro Test
    Balance @ ready to ship
  Electronic Transfer required 30 days after invoice receipt
  Refundment / security / performance bonds are not included.

PACKING:
- The Price includes Heatec's standard packing. If Purchaser requires special packing, the extra cost caused thereby shall be borne by Purchaser.

SHIPPING:
- Transportation charges from point of shipment to point of destination shall be arranged for and paid for by the Purchaser, unless a separate freight contract is entered into between the parties.
- Purchaser shall control the type of transportation and routing.
- An anticipated ready for ship date shall be established upon Heatec's receipt of signed Sales Proposal and Heatec's receipt of the down payment.

DELAY:
- If Heatec is not released by the Purchaser to order materials for fabrication at the time Purchaser signs this Sales Proposal, Heatec reserves the right to review and adjust the Price.
- In addition, delays in fabrication due to delays in Purchaser's release or other reasons due to Purchaser, will require an adjustment in the anticipated shipment date.

STEEL PRICES ESCALATION NOTE:

Because of price volatility from steel manufacturers, any order will be subject to a review of material costs from the time of the proposal to the time that the material is actually allocated to the order. Any steel material cost changes will be based on the #1 Chicago Heavy Melt which is listed daily in numerous publications such as THE AMERICAN METAL MARKET. The calculation for the cost variation will be the difference between the Chicago #1 Heavy Melt scrap index 8 weeks prior to the date of this quotation and that same index price on the date 8 weeks prior to shipment of the respective order, which roughly corresponds to the steel material order date. That calculation will multiply the total weight of the steel plate, structural steel, and steel pipe of the product provided by the applicable index price variation. The increase, or decrease, in price will be shown as an additional line item on the respective invoice. This is the most appropriate and transparent method to deal with the current unpredictability of the steel market today. Please, contact us if you have any questions concerning this Escalation Note.

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Chattanooga, TN 37410 USA

July 22, 2024

ASTEC PROPOSAL #: HI 23-15005 Rev 4

THE WORLD LEADER IN INTEGRATED PROCESS SOLUTIONS

SUPPORT•TECHNOLOGY•TRAINING

A PROPOSAL TO PROVIDE A

REGEN GAS HEATING SYSTEM

FOR

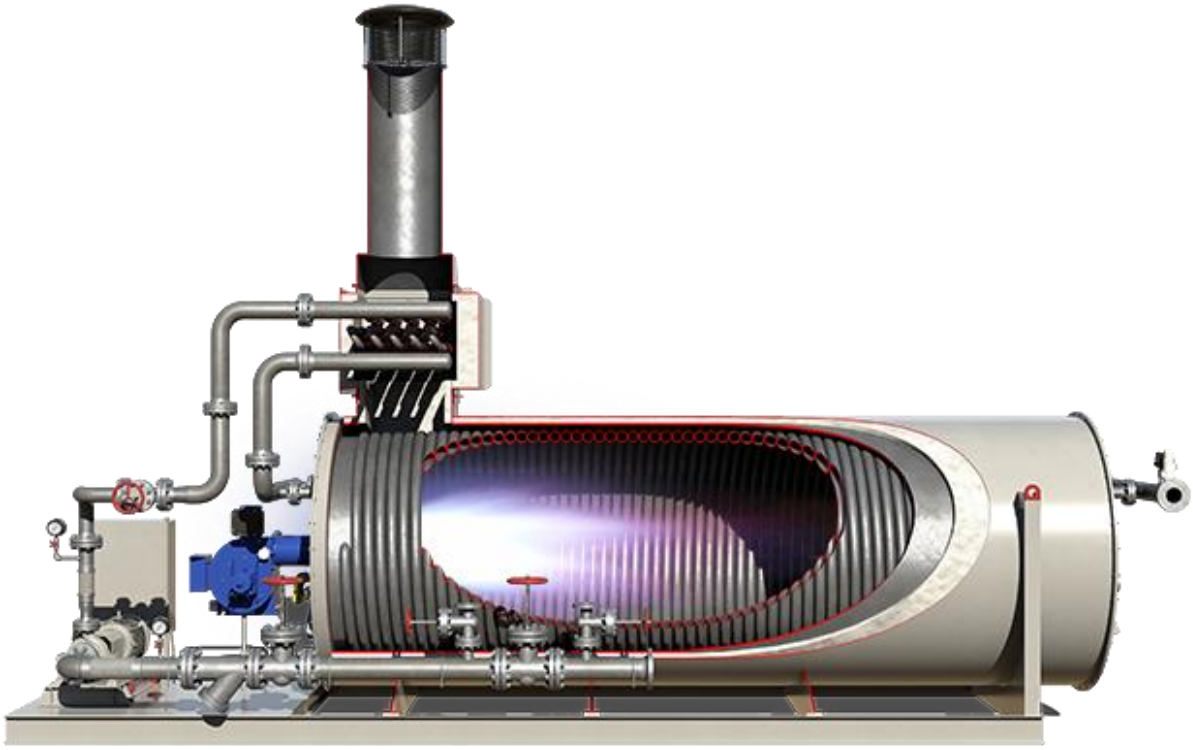
H-4701 Regen Gas Heater for Targa's DOU Copperhead plant in NM

PREPARED EXCLUSIVELY FOR

Bryan Nix
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This is a cut away depiction of our standard horizontal heater internals. It does not necessarily represent the package quoted. The main advantage of this design is the extremely large radiant section. Since this is where most heat transfer occurs, the ideal design utilizes a large radiant section. The two-pass heater life expectancy is 2-4 times that of other styles.

ASTEC ADVANTAGES:

1. The radiant heating surface of two pass heaters is typically 50% greater compared to that of other style heaters. The result is that the two-pass heater will have lower radiant flux rates. High radiant heat flux causes high metal wall temperatures, causing premature coil failure and premature degradation of the thermal fluid. The life expectancy of the two-pass heater will be 2-4 times that of other designs
2. Should the coil ever have to be replaced, the bolted cover(s) of the two-pass design allow(s) for easy coil replacement without having to replace the entire heater or requiring shipment back to the factory for costly repair
3. There is more internal “room” in the less crowded two pass heater which allows for greater space between the flame and the coil. This lessens the chances for flame impingement and thus lengthens coil and thermal fluid life. Ease of inspection is also increased
4. The heater has an 18” bolted man-way. This allows access to the radiant section without removing the cover, the burner, the fuel train, the can and the conduit. This internal inspection is required in many locations
5. The heater utilizes complete flow through a uniform diameter coil without mixing or by-passing.
6. Front and rear peep sight(s) for viewing flame pattern and coil condition
7. No orifice plates required for balancing the flow
8. Insulation is on the inside of the heater where it cannot be damaged during shipment
9. Totally Packaged Heaters
10. In House Panel Shop
11. In House Coil Manufacturing
12. In House Hydro-Test
13. In House Painting / Sandblasting
14. In House Fully Function Tested Heaters
15. Custom (Highly Specified or Standard Units)
16. On Site Training
17. In House Service Department which is available for on-site training and start up
18. In House Engineering Department
19. Seventeen AutoCAD stations utilizing AutoCAD / Inventor / AutoCAD Electrical
20. In House Quality Assurance / Control Department
21. Heater manufacturer since 1977
22. Heatec Coil warranty will be 3 years from ship date. Typical lifetime of this heater without coil replacement is 20 to 30 years
23. Stamps and Certifications

EQUIPMENT DESIGN DATA:

HCI 10010-50-S-G	IP UNITS	SI UNITS
Heater Capacity (Btu/hr) (MW)	9,849,131	2.89
Firing Rate (HHV) (Btu/hr) (MW)	13,017,426	3.82
Heater Circulation Rate (lb/hr) (kg/hr) {Constant}	30,312	13,746
Heater Circulation Rate (MMSCFD) (Nm^3/hr) {Constant}	12.28	14,465
Minimum Allowable Circulation Rate (MMSCFD) (Nm^3/hr)	9.83	11,572
Heater Inlet Pressure (psig) (Barg)	900	62.1
Heater Outlet Pressure (psig) (Barg)	887.9	61.2
Heater Inlet Temperature (°F) (°C)	80	26
Heater Outlet Temperature (°F) (°C)	550	288
Stack Temperature (°F) (°C)	631	333
Calculated Heater Efficiency (%) (LHV) [See Note 1]	84.0	84.0
Calculated ΔP through Heater (psid) (Bar) (Clean)	12.1	0.8
Heater Volume (Gallons) (m^3)	930	3.5
Total Coil Surface Area (ft^2) (m^2)	1,433	133.2
Overall Flux Rate (Btu/hr-ft^2) (kW/m^2)	6,872	21.7
Radiant Surface Area (ft^2) (m^2)	717	66.6
Average Radiant Flux Rate (Btu/hr-ft^2) (kW/m^2)	9,268	29.2
Maximum Radiant Flux Rate (Btu/hr-ft^2) (kW/m^2) AICHE	12,511	39.4
Maximum Metal Temperature (°F) (°C) AICHE	612	322
Maximum Calculated Film Temperature (°F) (°C) AICHE	597	314
Average Fluid Velocity (ft/s) (m/s)	25.3	7.7
Combustion Air Flow Rate (sFt^3/hr) (Nm^3/hr)	143,205	4,056
Combustion Gas Flow Rate (sFt^3/hr) (Nm^3/hr)	13,072	370
Flue Gas Flow Rate (sFt^3/hr) (Nm^3/hr)	156,895	4,443
Flue Gas Pressure Drop (" WC) (mmHg)	0.27	13.82

Note 1: Based on HHV of typical natural gas. Guaranteed efficiency is 1% less.
Note 2: Average Vapor Relative Molecular Mass = 22.467

SYSTEM PARAMETERS:

The following system parameters are incorporated into this proposal.

Plant location	New Mexico
Plant elevation (fasl)	3,500
Heater location	Outdoor
Ambient Temperature (ºF)	0 to 105
Burner turndown	5:1 Gas
Excess air %	15
Noise Limit (dB(A))	< 85 at 3 ft
Heater orientation	Horizontal
Primary fuel (psig @ rated capacity of the burner)	Fuel gas (125)
Compressed air from clean, dry, safe source	10 to 40 scfm @ 116 to 80 psig
Electrical	480 V / 3 PH / 60 Hz
Control voltage	110 V / 1 PH / 60 HZ / 24 V DC
Area Classification	Class 1 Div. 2 Group C & D
Thermal fluid (Not Included)	Regen Gas

Note: Please confirm fuel pressure and temperature.

	FUEL TABLE	MOL %
N_2	Nitrogen	1.84
H_2O	Water	0.00
H_2	Hydrogen	0.00
H_2S	Hydrogen Sulfide	0.00
CO_2	Carbon Dioxide	0.00
CO	Carbon Monoxide	0.00
CH_4	Methane	97.60
C_2H_6	Ethane	0.54
C_3H_8	Propane	0.02
C_4H_{10}	i-Butane	0.00
C_4H_{10}	n-Butane	0.00
C_5H_{12}	i-Pentane	0.00
C_5H_{12}	n-Pentane	0.00
C_6H_{14}	n-Hexane	0.00
O_2	Oxygen	0.00

REGEN GAS PROPERTIES	
Inlet Temperature (°F)	80
Inlet Density (lb/ft^3)	4.42
Inlet Heat Capacity (Btu/(lb*°F))	0.651
Inlet Thermal Conductivity (Btu/(h*ft*°F))	0.022
Inlet Dynamic Viscosity (cP)	0.013
Outlet Temperature (°F)	550
Outlet Density (lb/ft^3)	1.87
Outlet Heat Capacity (Btu/(lb*°F))	0.729
Outlet Thermal Conductivity (Btu/(h*ft*°F))	0.042
Outlet Dynamic Viscosity (cP)	0.018

	REGEN GAS TABLE	MOL %
N_2	Nitrogen	1.35931
H_2O	Water	0.00
H_2S	Hydrogen Sulfide	0.000132193
CO_2	Carbon Dioxide	2.33237E-07
CH_4	Methane	72.55050
C_2H_6	Ethane	13.51700
C_3H_8	Propane	7.840360
C_4H_{10}	i-Butane	1.03989
C_4H_{10}	n-Butane	2.632210
C_5H_{12}	i-Pentane	0.480309
C_5H_{12}	n-Pentane	0.453480
C_6H_{14}	n-Hexane	0.0667919
C_7H_{16}	Heptane	0.039458
C_8H_{18}	Octane	0.003300
C_9H_{20}	Nonane	0.005458
$C_{10}H_{22}$	Decane	9.2761E-06
	Undecane	3.13074E-06
	Benzene	0.00871813
	Toluene	0.002751
	Ethylbenzene	0.000123
	m-Xylene	0.000230885

APPROXIMATE PHYSICAL DATA:
The equipment will have the following estimated dimensions and dry weights. Piping and controls external to the heater are to be insulated in the field by customer. All equipment will be assembled and mounted as stated below. Items too large for shipment, or subject to damage during shipment, will be shipped loose (unattached) and will require re-assembly in the field.

Equipment	L (ft)	W (ft)	H (ft)	Wt (Lbs)	Mounting
Horizontal Heater	31.1	9.3	9.6	44,225	Skid
Exhaust Stack		2.5	8.0	643	Top of Heater
Blower (HP)	20	TEFC			Front Cover of Heater
Pilot Gas Train	NPT	0.5	Inch		Side of Heater
Main Gas Train	NPT	2.5	Inch		Side of Heater
Control Panel	3.0	1.0	4.0	500	Front of Heater Skid

PAINTING:
Customer specified paint system.

Purchased items will be painted with vendors' standard paint, stainless items will remain unpainted.

DRAWINGS / ENGINEERING:
Drawings will be sent via e-mail or provided on USB thumb drive (AutoCAD). Please note that the tolerance of our drawings is + or – ¼". Construction of connections to heater should allow for modifications to be made in the field with at least 2 degrees of freedom.

Description	Description
Manuals on CD	General Arrangement
P & ID	Bill of Material Mechanical
Electrical Diagrams (Ladder Type)	Bill of Material Electrical
Nameplate Details	Hydro-test Report
Lift Lug Details	Spare Parts
Motor Curves	NDT Reports
Motor Data Sheets	Utility Requirements
Material Certifications	Quality Control Manual
Foundation Loadings	Mechanical Design Calculations

DESIGN CRITERIA:
The equipment will be designed to the requirements stated below. Quality is assured by our in house quality control department. Thickness of coil and shell will not be affected by the manufacturing process as we keep all diameters above the limits that would have an impact on it. Hydrostatic testing will be carried out at our facility and witnessed by our quality control manager.

Heater Coil Design:
ASME Section VIII design @ 650 ºF to -20 ºF, @ 1100 psig with CA = 0.0625
Heater Shell Design:
Non-code design @ 300 ºF to -20 ºF @ 15 In W.C. with CA = 0.0625
Fuel Train Design:
105 ºF to 0 ºF / UL / NFPA 87 & 70
Heater Stack Design:
Non-code 800 ºF to -20 ºF @ +15" W.C. w/ CA = .0625
Panel & Controls:
105 ºF to 0 ºF / UL 508 A / NFPA 87 & 70 / NEMA 4X (316 Stainless Steel)
NEC Class I Division 2 Group C & D T3
NEMA 4X (316 Stainless Steel) with "Z" type purging
Junction Box Enclosure:
NEMA 4X (316 Stainless Steel)
Ignition Transformer Enclosure:
NEMA 4X (316 Stainless Steel)

EQUIPMENT RECOMMENDATIONS:
The heater is designed, manufactured, wired, and tested at our facility in Chattanooga, Tennessee USA. It is completely packaged and will include the following:

HEATEC HCI HEATER:
- Two-pass tight-wound helical coil heater
- Carbon steel (SA106 Gr. B seamless) schedule 80 tight-wound helical coil
- Single 6" inlet and outlet 600 # (SA105) flanges
- Heater coil hydro-testing per ASME code
- Coil will be stamped and receive National Board Registration
- 304 SS coil supports (skip welded to shell to help dissipate heat transmission)
- Coil is enclosed by an (minimum ¼" thick) A36 carbon steel shell with bolted end covers (w/ lift eyes)
- Internally insulated with ceramic fiber blanket, using welded 310 SS pins with washers for support. Blanket will receive a coat of rigidizer
- Peep sight in rear cover
- Inert gas smothering connection in front cover. (Gas and controls by others)
- Structural steel skid with saddles welded to channels to form a skid mounted frame, and a five foot skid deck extension for mounting controls
- Skid lifting lugs (minimum of four)
- 18" diameter bolted access door in rear of heater
- Coil butt welds receive 100% radiography

EXHAUST STACK:
An exhaust stack to disperse the heater flue gasses to the atmosphere.
- Stack with flanged bottom connection and 2 flue gas sampling ports, rain cap and bird screen (Un-insulated)

POWER FLAME TYPE EVO BURNER:
The Power Flame EVO™ burner offers staged/premix combustion technology to maximize operating efficiency and reduce NOx emission on natural gas firing below 30 PPM without the use of flue gas recirculation (FGR). Designed to fire a range of gaseous fuels and light oil, this burner utilizes a unique firing head design which provides stable combustion over a wide turndown.
- Direct spark ignited natural gas pilot (Interrupted type)
- Ignition transformer
- UV self-checking flame detection scanner
- Blower is integral to burner
- Inlet damper with modulation motor, duct and combustion air pressure switch
- Burner is sized for 113% capacity

GAS TRAIN:

- Pilot train with regulator, double block safety shutdown valves, manual valve, 1 x pressure gauge
- Main train
- Drip leg
- Manual shutoff valve
- Gas Strainer
- Tee to pilot train
- Pressure gauge x 2
- Stepdown gas regulator (Must be vented to a safe location)
- Gas regulator (Must be vented to a safe location)
- Low and high pressure switches
- Fuel Modulation via modulation valves with linkage-less system
- Double block (one with proof of closure switch) safety shutdown valves
- Bleed line with two (2) manual shutoff valves for leak testing
- Heat tracing, if necessary, is by customer

Heatec/Astec Heater Emissions	
Design Firing Rate (MMBTU/hr) (HHV):	13,017,426
NOx Emission Guarantee (ppmw):	30
CO Emission Guarantee (ppmw):	50
VOC Emission Guarantee (ppmw):	5
UHC Emission Guarantee (ppmw):	15
Nox Emission Guarantee (lb/mmbtu):	0.0365
CO Emission Guarantee (lb/mmbtu):	0.0477
VOC Emission Guarantee (lb/mmbtu):	0.0056
UHC Emission Guarantee (lb/mmbtu):	0.0168
Stack Height (From ground, ft):	19.4
Stack Diamter (ID, ft):	2.5
Flue Gas Flow Rate (SCFH):	156,895
Flue Gas Flow Rate (ACFM):	5,487

1. All emissions are from 50% to 100% of maximum combustion rating (MCR)
2. All emissions in the units of PPM are referenced to 3% dry stack oxygen
3. Emissions are valid for natural gas (fuel analysis must be submitted by customer) combustion only. The values are based on natural gas containing no bound nitrogen and no sulfur
4. If the stack emissions exceed the guarantee level, ASTEC/ Burner manufacturer will work with customer to reduce the emissions to the guaranteed level. ASTEC / Burner manufacturer will, at its costs, make any and all adjustments and / or modifications to burner that it deems appropriate and proper to meet required levels
5. Compliance testing of the system must be conducted within 60 days of initial start-up. Start-up must occur no later than 120 days from shipment. Testing is to be accomplished by an independent authorized agency agreed to by ASTEC / burner manufacturer utilizing EPA-Method 7E. All costs of compliance testing shall be paid by customer
6. All guarantees contained in these conditions and limits shall end following completion of compliance testing wherein all emission test points are documented to be at or below guaranteed levels

LOCALLY MOUNTED INSTRUMENTS:

- Low flow signal is to be supplied by customer.
- Inlet / outlet Regeneration Gas pressure gauge with isolation valve (NPT)
- Inlet / outlet Regeneration Gas thermometer with thermo-well (NPT)
- Outlet Regeneration Gas temperature thermocouples with thermo-well (NPT)
- Stack temperature thermocouple with thermo-well
- Relief valve is to be supplied by customer.
- Conduit will be used for all wiring

BURNER MANAGEMENT SYSTEM (BMS) ELECTRICAL CONTROL ENCLOSURE:

The heater's electrical control enclosure contains all of the electrical components to safely operate the heater. The burner management controller provides the proper burner sequencing, pre-purge, ignition and flame monitoring protection for automatically ignited oil or gas fuel burners. The enclosure also has a single-loop, 4-20mA modulating, digital temperature controller and two digital temperature limit controllers; one for the thermal fluid and one for the stack. The burner managment controller also monitors other heater safety limits in it's limit circuit. If a limit condition occurs, the burner managment controller safely shuts down the burner. The enclosure and installed components meet NEMA standards. The enclosure is designed and wired to meet the requirments of NFPA 70, National Electric Code (NEC) and the requirements found in Underwriters Laboratories Inc. (UL) 508A Listing for Industrial Control Panels. This listing can be verified on the following website: http://www.ul.com/database.

The BMS control enclosure will be manufactured and tested by ASTEC. The control panel includes the following:

- AO ground to -24vdc common
- All safety devices connected to DI through relays as input for troubleshooting.
- DI register on HMI page
- LOP (light off position) Hold through MTFI (main trial for ignition) and additional 30 seconds, then release to modulate. Program changes from basic package
- Reset PID PV to Zero at the same time it releases to Auto modulation.
- Heater tied to burner alarm on FAL and FALL shutdown conditions
- Siemens breaker disconnect mounted on back panel with a through-the-door operator handle
- Motor starters are by others
- Fireye BurnerLogix burner management system (BMS) model YB110UVSC with self-check scanner amplifier card. The YB110 has a display with keypad mounted in the enclosure door allowing user to easily scroll through various menus to view the current operating status, review programmer configurations and lockout history. The flame reset button is on the keypad. The YB110 has the capability to communicate its status data via Mod-Bus RTU as a slave with a Mod-Bus RTU master device. Programming of the RTU Master to pole the Fireye is responsibility of the customer. The YB110 BurnerLogix is cUL US Listed, CE and FM approved
- Control relays and fused terminal blocks
- DI, DO & AI fused connections entering and leaving the rack.
- Control relays and fused terminal blocks
- Yokogawa UT35L (1/4DIN) high stack temperature limit switch with primary output relay, manual reset, digital display and 4-20mA re-transmission output capability.
- Lights for: power and alarm indicator lights
- Switches for: burner off/on, alarm silence, low fire hold and pump select (if applicable)
- Dry contacts on common alarm and heater run status
- Flame safety reset button

- Emergency shut down button
- Alarm horn, to indicate alarm (mounted adjacent to panel)
- Window kit for indicating controls
- “Z” Purge Package
- Allen-Bradley CompactLogix 5069 PLC with Panelview Plus 12 HMI for air-fuel ratio control.
- Panelview HMI to be updated to latest firmware version and VNC enabled.
- PLC rack and programs to have same version.
- Heating element with panel insulation and thermostat

July 22, 2024 ASTEC PROPOSAL #: HI 23-15005 Rev 4

Exceptions and Clarifications

HEATEC's Quotation is in basic accordance with the specifications, drawings, terms and conditions, and requirements of the invitation to bid; however, the following exceptions have been identified, priced and are attached hereto for consideration
Purchase order must make reference to HEATEC Quotation
Equipment is quoted EXW, HEATEC, Chattanooga, TN, Incoterms® 2020. Equipment will be loaded on truck free of charge. This means the delivery of Equipment on the truck at the specified point of departure (HEATEC) is covered in the quotation price. Purchaser is responsible for the main carriage / freight, cargo insurance and other costs and risks. Purchaser shall furnish all necessary facilities, labor, materials and equipment for unloading and conveying the Equipment to its erection point. The Equipment shall be erected, installed, set and leveled by Purchaser at its expense.
Purchaser shall furnish all necessary labor, materials, equipment, fuel, inert snuffing controls / media, air (if required), nitrogen (if required) and electricity required for starting up the Equipment. HEATEC will not be responsible for the installation or design of the footings, foundations or anchor bolts. Emissions compliance testing, mechanical run test, Site Acceptance Test, and performance tests are not included in Quotation. Testing included in Quotation includes the testing as described in the HEATEC Standard FAT (Available for inspection) and the HEATEC Standard ITP (Available for inspection) and any tests stated in the Quotation.
Heatec warranty, payment terms and cancellation charges are as stated below.
Export packing / preservation / storage are not included. Domestic packing is included. This includes flange / stack covers, wrapping of panel, crating of loose shipped parts.
Taxes, tariffs and duties are not included.
Order will be executed according to USA / TN laws. It is the responsibility of Purchaser to inform HEATEC via specifications of local / jurisdictional laws that may affect Equipment design (i.e. emissions, insurance codes, etc.). Purchaser assumes all responsibility for complying with all federal, state and local statutes, laws, codes, regulations and ordinances in connection with the design, installation and operation of the Equipment and any other activity related thereto, including, without limitation, the Clean Air Act and all rules and regulations promulgated thereunder and the Occupational Safety and Health Act and all rules and regulations promulgated thereunder. Some parts of the heater will exceed OSHA temperature requirements. (Average skin temperature of heater shell is 170°F with 5 mph wind and 70°F ambient.)
Any freight prices that may be quoted are estimates for budgetary purposes only. Due to the volatile nature of freight pricing, HEATEC cannot give a firm price for freight during the proposal phase of the project, because this phase occurs well in advance of the actual delivery. If contracted with HEATEC, freight will be billed at the actual cost plus a 10% handling fee.
All drawings will be standard AUTO-CAD. Delivery time stated in Quotation depends upon the approval process and the changes made during this process. Typical approval time is two weeks after receipt on all drawings. Only those drawings listed above will be offered. Drawings will be submitted electronically. If drawing approval consists of multiple or major changes, delivery time can be affected as well as the price. Drawing period is based on current engineering load and is subject to change without notice. Drawings will be sent via e-mail or provided on disk. Hard copies will require additional cost. Please note that the tolerance of HEATEC drawings is + or – ¼". Construction of connections to heater should allow for modifications to be made in the field with at least 2 degrees of freedom.
Control voltage is as stated in quotation.
Insulation / tracing / personnel protection of piping and equipment external of heater is not included. This is best done in the field by local contractor to eliminate damage during shipment and to allow checking for leaks prior to start up.
Fusible loop system, testing of refractory / insulation materials, burner / blower testing, spreader bar and slings are not included.
Galvanic isolation barriers and cathodic protection are not included.
Single line drawings are not included. HEATEC performs ladder type diagrams.

Pipe, fittings, bolts, nuts and steel will be purchased from HEATEC's standard vendors. Plate and shapes are A36 carbon steel. Tubes supports are 304 SS. Stud bolts are SA 193 Br B7. Nuts are SA 194.
All purchased items will remain as painted from respective vendor.
Ladders and platforms are not included unless stated in Quotation.
If area is Class I Div 2 then panel is NEMA 4X with "Z" type purging. All other controls are NEMA 7, hermetically sealed, intrinsically safe or they are purged. Motors are TEFC. Equipment will be designed to NEC area as stated in Quotation.
Unless stated otherwise in Quotation, HEATEC takes exception to ISO, BS, NACE, API, GOST, ATEX, CE, IEC, SIL, & CENELEC specifications. HEATEC will assist in complying with these regulations where required but HEATEC cannot be sure the equipment as quoted will comply.
Heatec standard Quality control manual will be used for all welding, NDE, etc. Heatec standard welding procedures will be used for all welding. Heatec weld procedures and welders are ASME approved/certified. The weld procedures are available for Purchaser review only and revisions are not allowed. If Purchaser specifications have requirements other than what is listed on Heatec weld procedures, then Purchaser specific weld procedures can be produced. New procedures will result in a cost adder and will delay the original shipping date provided in the HEATEC Quotation. The increase in cost and length of delay will be dependent on the extent of the specification requirements. NDE of non-pressure vessel welds is not included unless stated in Quotation. Non pressure vessel welds are continuous but are not full penetration.
Flame arrestor, spark arrestor, UPS, noise test, fire & gas detection, outdoor lights, aviation lights, variable speed motors, soot blowers, lancing ports, fireproofing, knockout tank, insulation rings, insulation clips, vapor barriers, explosion door, spare parts, thermal fluid, shell / structural / piping stress analysis test, export custom clearance and vibration tests, start-up and erection assistance are not included. Only the controls listed in the Quotation are provided.
Hazardous area electrical equipment certification is simply a copy of each electrical item certificate. The entire heater does not have this type of approval.
Liquidated damages shall not apply.
HEATEC takes exception to specifications and required documentation referring to any other language other than English.
HEATEC is not responsible for implementing documentation or paying taxes, duties or other charges relating to exporting/importing proposed equipment into any country outside the Continental United States
Seal offs (If required) are to be poured in the field by Purchaser.
Relief valves and vents should be piped to a safe location by Purchaser.
Noise data sheet is provided by the blower manufacturer only
Redundancy is not included.
Thermal fluid by-pass, relief valve by-pass, relief valve isolation and flow control is not included unless specifically stated in the Quotation. By-pass and isolation valves around flow control valves and regulators have not been included.
Shield rows in convection section are not required or included.
SAT / Performance test is not included. Functional test of all components is included.
Skid drip pan, lip and grating have not been included.
Rupture discs are not included on relief valves.
Galvanizing of any materials is not included unless stated in Quotation.
PWHT is not included.
API guidelines are not included unless specifically stated in the body of this proposal

ZEECO QUOTATION



CLIENT:	Targa Resources, Inc.
END USER:	Targa Resources, Inc.
ZEECO QUOTE #:	2023-10875FL-01
QUOTE REV #:	0
DATE OF ISSUE:	September 29, 2023
APPLICATION ENGINEER:	Kendall Konrade

ZEECO®

BURNERS | FLARES | THERMAL OXIDIZERS
VAPOR CONTROL | RENTALS | AFTERMARKET

Zeeco; Inc
22151 East 91st Street
Broken Arrow, OK 74014 USA

Tel: +1 918-258-8551
Fax: +1 918-251-5519
kendall_konrade@zeeco.com
zeeco.com

September 29, 2023

Targa Resources, Inc.

Houston, TX

Attention: Brian Nix
Ph:
Email:

Subject: Targa Resources, Inc. Ref.:
Zeeco Reference: 2023-10875FL-01 -- Rev. 0

Thank you for your interest in Zeeco, Inc. We look forward to the opportunity to work with you on this project. In response to your above referenced inquiry, we are pleased to provide you with our proposal for the combustion equipment designed specifically for your needs.

Zeeco's flare systems are designed to handle peak releases immediately, with no adverse effects on the flare itself or on the pilots or ignition system. Zeeco's design also offers exceptional reliability and life expectancy as well as provisions for easy maintenance and repair.

Zeeco appreciates the opportunity to propose our products to Targa Resources, Inc.. We are confident that we offer the best flaring equipment in the world at competitive prices. Should you have additional questions or require additional information, please feel free to contact us.

Best Regards,

Kendall Konrade
Flare Application Engineer
(reach me by email at: kendall_konrade@zeeco.com)

CELEBRATING 40 YEARS | EST. 1979

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AVAILABLE ATTACHMENTS

Attachment A	**Company Introduction**
Attachment B	**Commercial Proposal**
Attachment C	**Process Conditions**
Attachment D	**Specification Sheets:** • **Flare Tip Specification Sheet** • **Flare Pilot Specification Sheet**
Attachment E	**Spare Parts** • **Spare Parts for Start-up & Commissioning** • **Spare Parts for Two Years Operation**
Attachment F	**Clarifications and Exceptions**
Attachment G	**Start-up & Maintenance Services**
Attachment H	**Radiation Profile**
Attachment I	**Typical GA Drawing**
Attachment J	**ISO &ASME Sec. VIII Code Certificates**
Attachment K	**Sample Inspection and Test Plan**
Attachment L	**Zeeco Rental Brochure**

Attachment A

Company Introduction

COMPANY INTRODUCTION

Since its inception in the early 1980's, Zeeco has been committed to providing quality combustion equipment and services for the petroleum, chemical, petrochemical, pharmaceutical and food processing industries worldwide. To fulfill this commitment, Zeeco built a modern facility on 193 acres just outside of Tulsa, Oklahoma. This complex is the home for Zeeco corporate headquarters, an ASME code manufacturing facility and a comprehensive combustion research and testing center.

Zeeco management knew that a world-class facility alone would not be enough to earn customer recognition as a leader in combustion technology. They knew that they also needed the talents of knowledgeable and innovative people. By recruiting a team of engineers with years of hands-on experience in the design and operation of complex combustion and pollution control equipment, Zeeco has achieved its goal of not merely matching the performance of equipment already on the market but creating the next generation of burners, flares, incinerators and combustion systems.

Zeeco feels strongly that its people and its commitment to quality products and services, set it apart from the competition. Zeeco is flexible enough to provide personalized attention to each customer whether the customer requires a small replacement part or multi-million dollar system. With its sound financial strength, modern facility and creative, knowledgeable staff, Zeeco is your logical choice for combustion equipment both now and in the future.

FLARE SYSTEMS

Having manufactured and installed many of the world's largest and most complex flare systems, Zeeco has consistently shown the ability to satisfy any customer requirement. In addition to standard utility flares, Zeeco offers a comprehensive selection of smokeless flares for new installations and retrofits including steam-assisted, air-assisted, gas-assisted, high-pressure/low-pressure, staged, sonic, ground and enclosed models. Zeeco manufactures flares for numerous applications including refineries, petrochemical and gas plants, offshore platforms, pulp and paper mills, landfills and food processing plants.

Zeeco also offers comprehensive engineering services to design, build and erect multi-million dollar flare projects. Zeeco systems include self-supported, guy-supported and derrick-supported flare stacks as well as offshore boom-mounted flares, portable flares and demountable flares.
Zeeco also has the ability to develop specialty flares for custom applications. For example, Zeeco accepted an industry challenge to develop a crude oil flare which could substantially reduce pollution by decreasing the level of smoke and hydrocarbon fallout produced during offshore well testing. The result was the introduction of the ZLF Flare, rated more than 99.99% efficient by independent industry testing firms.

Auxiliary flare system equipment available from Zeeco includes purge reduction devices, liquid seals, knock-out drums and the most reliable pilot ignition systems. Zeeco also refurbishes existing flares and provides spare parts for their flare equipment and that of other flare manufacturers.

Scope of Supply

Our scope of supply will include:

1) General Arrangement Drawings for customer approval.
2) Operation & Maintenance Manual.
3) The equipment necessary for flaring the waste streams as specified in the inquiry documents, including:

Air Assisted Flare Tip (F-1) with Integral Velocity Seal & Pilots
150 ft Overall Height Self-supported Flare Stack (STK-1)
Manual/Automatic High Energy Spark (HEI-1) Ignition System
Pilot Fuel Gas Train Shipped Loose
Utility Piping & Supports Along Flare Stack from Tip to Near Grade
One (1) Duplex Retractable Thermocouple per Pilot with JB Near Grade
Conduit & High Temp HEI Ignition Wiring Along Stack with JB Near Grade
One (1) Common Zeeco Navigator Thermocouple Straightener Device
One (1) Vane Axial Blower - 150 HP, VFD Compatible
Flare Stack Base Plate Template
Process Engineering & Design Work for the Complete Flare System
Domestic Packing / Shipping Preparation

Scope of Supply (Continued)

Our Scope of Supply does NOT include:

1) Stack or Piping External Insulation, Fireproofing, or Heat Tracing.
2) Field Assembly and / or Erection.
3) Commissioning, Start-up, Supervision, Training, etc. (PER DIEM BASIS).
4) Foundation Design / Supply or Civil Engineering.
5) Interconnecting Piping, Wiring or Conduit Between Stack Base and LCP.
6) Ocean or Inland Freight to Jobsite.
7) Shop Details / Fabrication Drawings of Proprietary Equipment.
8) Any Containerization of Equipment for Shipment or Storage Purposes.
9) Flare Stack Base Plate Templates.
10) Foundation Imbedded Anchor Bolts.
11) Spare Parts Quoted Separately and Priced Lists Included in Proposal.
12) Any Motor Starters or Motor Drivers or Motor Controls.
13) Any Third Party Inspection / Testing / Certification Services.
14) Any VFD System
15) Any Aircraft Warning Lights

Scope of Supply (Continued)

Pricing and Payment Terms

Flare System as Detailed In This Proposal:

Options:

> Project is based on duplication of Greenwood I Gas Plant Flare System and Design. As such, all drawings and documentation would be issued for information only, and any additional changes to design will need to be reviewed to determine cost and/or schedule impact.

FCA:	Shop Door, Zeeco (Flare Tip, Pilots & Ignition Point of Manufacture (Stack, Structural Steel,
Base Pricing Validity:	30 days from date of quotation
Optional Pricing Validity:	7 days after receipt of an order or LOI, unless specifically defined otherwise
Terms of Payment:	20% Of Order Value Upon Receipt of Order 25% Of Order Value Upon Submittal of GA and P&ID 25% Of Order Value Upon Purchase of Flare Stack Material 25% Of Order Value Upon Readiness for Shipment 5% Of Order Value Upon Submittal of Final Documents, Latest 90 Days After Shipment Net 30 Days
Delivery:	
Foundation Loadings:	3 weeks after receipt of order
GA Drawings / P&ID for Approval:	4 weeks after receipt of order
Panel Drawings / IDS for Review:	4 weeks after receipt of order
Equipment Readied for Shipment:	28 weeks after drawing approval
Warranty:	18 months from ship date, or 12 months from start-up, whichever condition expires first.

Attachment C

Process Conditions

Process Conditions -- English Units

Client:	Targa Resources, Inc.	Zeeco Ref.:	2023-10875FL-01	Date:	29-Sep-23
Location:	Texas	Client Ref.:	0	Rev.	0

	Mol %					
	Fire Zone 17	Fire Zone 14	Fire Zone 20	PSV-2401A CV Failure	IP Broken Arrow	Flip Wilson Recovery
METHANE	34.20			73.96	70.45	96.82
ETHANE	21.96	1.45	0.01	10.81	12.10	0.47
PROPANE	27.30	96.56	0.11	7.11	8.65	0.02
BUTANE	12.44	1.99	11.92	3.18	3.61	
PENTANE	3.44		15.06	0.94	1.42	
HEXANE	0.20		25.31	0.28	0.42	
HEPTANE	0.02		23.70	0.04	0.14	
OCTANE			18.42	0.01	0.02	
NONANE			4.74			
DECANE			0.72			
DODECANE						
TRIDECANE						
CYCLOPENTANE						
ETHYLENE						
PROPYLENE						
BUTYLENE						
ACETYLENE						
BENZENE						
TOLUENE						
XYLENE						
CARBON MONOXIDE						
CARBON DIOXIDE				1.50	0.36	
HYDROGEN SULFIDE						
SULFUR DIOXIDE						
AMMONIA						
AIR						
HYDROGEN						
OXYGEN						
NITROGEN				2.05	2.50	2.69
WATER				0.12	0.34	
BUTADIENE						
METHANOL						
Total	**100**	**100**	**100**	**100**	**100**	**100**
Mol. Wt.	34.03	44.17	91.55	22.33	23.32	16.44
L. H. V. (BTU/SCF):	1,809	2,319	4,636	1,157	1,224	888.6
Temperature (Deg. F):	22.0	85.5	409.8	39.4	71.6	107.2
Avail. Static Pressure (psig):	10.00	10.00	10.00	10.00	10.00	10.00
Flow Rate (lbs/hr):	312,439	281,715	155,450	296,622	706,575	360,970
Smokeless Rate (lbs/hr):	56,500	53,000	46,000	69,500	66,500	360,970

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Process Conditions -- English Units

Client:	Targa Resources, Inc.	Zeeco Ref.:	2023-10875FL-01	Date:	29-Sep-23
Location:	Texas	Client Ref.:	0	Rev.	0

	Mol %					
	Flip Wilson Rejection	Case B	Case C	Case J	Case K	Case L
METHANE	87.77					
ETHANE	9.63					
PROPANE	0.16					
BUTANE						
PENTANE						
HEXANE						
HEPTANE						
OCTANE						
NONANE						
DECANE						
DODECANE						
TRIDECANE						
CYCLOPENTANE						
ETHYLENE						
PROPYLENE						
BUTYLENE						
ACETYLENE						
BENZENE						
TOLUENE						
XYLENE						
CARBON MONOXIDE						
CARBON DIOXIDE						
HYDROGEN SULFIDE						
SULFUR DIOXIDE						
AMMONIA						
AIR						
HYDROGEN						
OXYGEN						
NITROGEN	2.44					
WATER						
BUTADIENE						
METHANOL						
Total	**100**					
Mol. Wt.	17.73					
L. H. V. (BTU/SCF):	958					
Temperature (Deg. F):	104.6					
Avail. Static Pressure (psig):	10.00					
Flow Rate (lbs/hr):	430,263					
Smokeless Rate (lbs/hr):	77,000					

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Attachment D

Specification Sheets:

- Flare Tip Specification Sheet
- Flare Pilot Specification Sheet

Air Assisted Flare Tip Specification Sheet

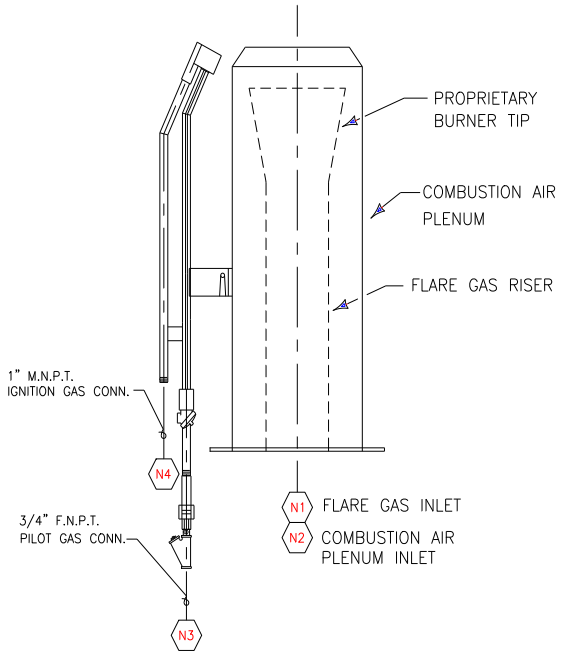
Client:	Targa Resources, Inc.	Zeeco Ref.:	2023-10875FL-01	Date:	29-Sep-23
Location:	Texas	Client Ref.:	0	Rev.	0

General Information:

Tag No.:	F-1	
Model:	AFTA-28/56	Type: Air-Assisted
Length:	10'- 0 "	
Weight:	3420 lbs	
No. of Pilots:	3	

Design Case:

Governing Case:	IP Broken Arrow
Molecular weight:	23.3
L. H. V. :	1,224 BTU/SCF
Temperature:	72 Deg. F
Available Static Pressure:	10.0 psig
Design Flow Rate:	706,575 lbs/hr
Governing Smokeless Case:	Case E
Design Smokeless Rate:	66,500 lbs/hr
Approximate Exit Velocity:	946 ft/s
Mach No.:	0.79
Approx. Tip Press. Drop:	5.27 psig



(Typical drawing only)

Construction:

Upper Section:	310 SS	Windshield:	NO
Lower Section:	304LSS	Flame Retention Hub:	310 SS
Refractory:	None	Lifting Lugs:	NO
Refractory Thk:	N/A		

Surface Finish (Carbon Steel Surfaces):

Surface Preparation:	SSPC-SP6	Primer:	Inorganic Zinc
Paint (c. s. surfaces):	High Heat Aluminum		

Connections:

	Qty.	Size	Type	Material
N1 - Flare Gas Inlet:	1	28 "	Beveled ; Weld	Carbon Steel
N2 - Combustion Air Inlet:	1	56 "	Fab. Plate Flange	Carbon Steel
N3 - Pilot Gas:	1	1/2"	FNPT	CF8M
N4 - Ignition Line:	0	n/a	n/a	n/a

Miscellaneous Notes:

1. Includes Integral Purge Reducing Velocity Seal.
2. Required Purge Gas Fuel Rate = 1185 SCFH
3. Lower Section of Air Riser to be constructed out of Carbon Steel material.

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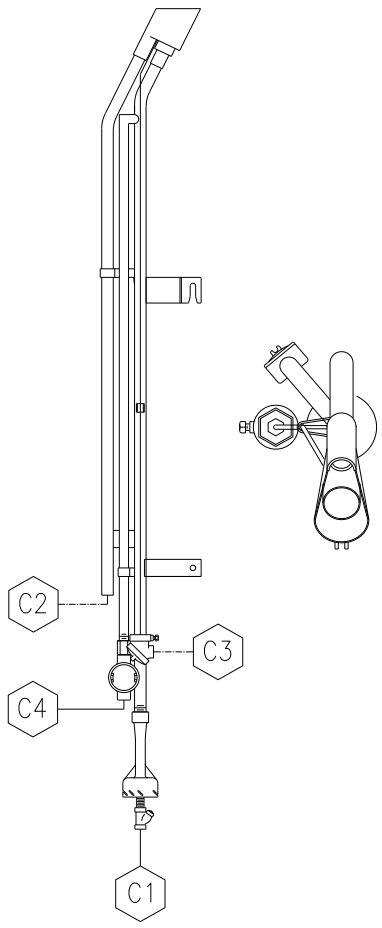
Pre-Mix Flare Pilot Assembly Specification Sheet

Client:	Targa Resources, Inc.	Zeeco Ref.:	2023-10875FL-01	Date:	29-Sep-23
Location:	Texas	Client Ref.:	0	Rev.	0

General Information:		
Tag No.:	FP-1	
Model:	HSLF	
Length:	9.135	feet
Weight:	68	lbs.
Pilot Type:	Pre-Mix	High Stability
Ignition Type:	High Energy Ignition/Flame Front Generator	

Process Design Data:		
Design Heat Release:	65,000	BTU/hr
Fuel Gas MW:	18.00	
Fuel Gas LHV:	1,000	BTU/SCF
Fuel Gas Temperature:	100	Deg. F
Fuel Gas Inlet Pressure:	15.00	psig
Fuel Gas Flow rate:	65.0	SCFH
Design Wind Velocity:	170	mph
Design Rainfall:	50.00	inches/hr
Mounting Position:	Vertical	
Thermocouple Type:	K	Ungrounded

Construction:	
Pilot Firing Tip:	CK-20
Windshield Assembly:	CK-20
Integral Thermowell:	CK-20
FFG Ignition Line:	n/a
Mounting Brackets:	CK-20
Premix Fuel Line:	310 SS
Thermocouple Sheath:	310 SS
Thermocouple Head:	CF-3M
Fuel Mixer / Spud Assembly:	CK-20 / SS316
Fuel Strainer Assembly:	CF-8M
HEI Probe and Support:	310 SS
HEI Junction Head:	CF-3M



Connections:	**Qty.**	**Size**	**Type**	**Material**
C1 - Fuel Gas Inlet:	1	1/2"	FNPT	CF8M
C2 - FFG Ignition Inlet:	0	n/a	n/a	n/a
C3 - Thermocouple:	1	3/4"	Conduit	CF-3M
C4 - HEI Ignition:	1	3/4"	FNPT	CF-3M

Misc. Notes: (see ignition system datasheet for type applicable to this quote)

1. Upper mounting bracket is reinforced hook type for pilot removal from platform.
2. Pilot mounting brackets and thermocouple mounting brackets are investment cast assemblies.
3. Pilot mixer assembly is investment cast, high efficiency computer modeled venturi section.
4. Thermocouples are duplex retractable type.

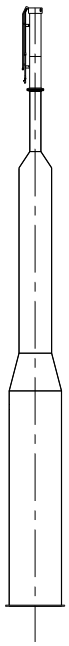
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Self-supported Flare Stack Specification Sheet

Client:	Targa Resources, Inc.	Zeeco Ref.:	2023-10875FL-01	Date:	29-Sep-23
Location:	Texas	Client Ref.:	0	Rev.:	0

General Information:

Tag No.:	STK-1
Overall Height:	150'- 0 "



(Typical drawing only)

Design Criteria:

Wind Design Code:	ASCE 7-10	
Seismic Design Code:	ASCE 7-10	
Importance Factor:	1.25	
Structural Design Code:	ASME STS-1/AISC	
Wind Speed (Structural):	120	mph
Seismic Zone:	Site Class "D"	
Max. Design Temperature:	400	Deg. F
Min. Design Temperature:	-20	Deg. F
Design Pressure:	50	psig
Riser Corrosion Allow.:	0.063	in.

Construction:

Riser Material:	Carbon Steel	Ladders & Step-offs:	None
Upper Diameter (approx.):	2'- 0 "	Platform at Tip:	None
Middle Diameter (approx.):	4'- 0 "	Additional Platforms:	None
Base Diameter (approx.):	8'- 0 "	ACWL:	None

Surface Finish (Carbon Steel Surfaces):

Surface Preparation:	SSPC-SP-6	Primer:	Inorganic Zinc
Int. Coat:	None	Finish Paint:	None

Utility Piping:

Per Attached Utility Piping Scope of Supply

Miscellaneous Notes:

1. See attached GA Drawing in Proposal Attachment I.
2. Flare Stack will be designed for single piece lift with flare tip.
3. Flare Stack is designed for elastic foundation per ASME STS-1.
4. Vane Axial blower to be suitable for installation directly to flare stack.

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High Energy Electronic Ignition Generator Specification Sheet

Client:	Targa Resources, Inc.	Zeeco Ref.:	2023-10875FL-01	Date:	29-Sep-23
Location:	Texas	Client Ref.:	0	Rev.	0

General Information:

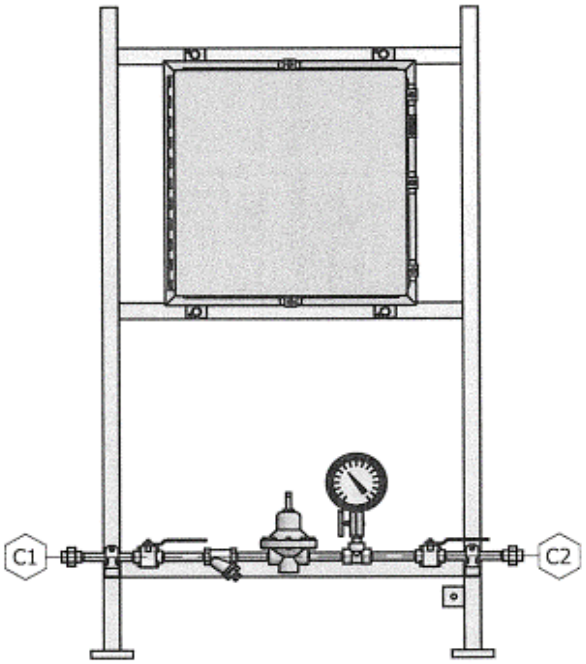
Tag No.:	HEI-1
Model No.:	HEIC-3-DT/S
Operation:	Manual/Automatic
No. of Pilots Ignited:	3
Area Classification:	Non-Hazardous
Spark Intensity:	Approx. 1,000 Volts

Fuel Gas Data:

Molecular Weight:	16.5
L. H. V.:	892 BTU/SCF
Temperature:	60 Deg. F
Pressure:	15 psig

Utility Consumption:

Pilot Gas (Per Pilot):	73 SCFH
Pilot Gas (Total):	219 SCFH
Power Available:	120 Volt, 1 Phase, 60 Hertz



(Typical drawing only)

Construction:

Fuel Gas Piping:	Carbon Steel	Ignition Probe Mat'l:	310 SS
Mounting Rack:	Carbon Steel	No. Thermocouples/Pilot:	1
Enclosure:	NEMA 4	Thermocouple Type:	K
Sun / Rain Shield:	No	Ignition Probes per Pilot:	1

Surface Finish (Carbon Steel Surfaces):

Surface Preparation:	Per Rack GA	First Coat:	Per Rack GA
Second Coat:	Per Rack GA	Finish Color:	Per Rack GA
		Enclosure:	Manufacturer Std.

Connections:

	Qty.	Size	Type	Material
Pilot Gas Inlet:	1	1/2"	3000# Thrd. Union	Carbon Steel
Pilot Gas Outlet:	1	1/2"	3000# Thrd. Union	Carbon Steel

Miscellaneous Notes:

1. Pilot Fuel Gas Piping would utilize carbon steel threaded components
2. Local Control Panel would utilize relay logic.
3. Ignition Panel will be mounted on rack while Pilot Fuel Gas Regulation Train to be shipped loose.
4. Pilot Gas Piping to be Schedule 80

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Utility Piping Scope of Supply

Client:	Targa Resources, Inc.	Zeeco Ref.:	2023-10875FL-01	Date:	29-Sep-23
Location:	Texas	Client Ref.:	0	Rev.	0

Flare Tag No.	Description	Qty	Pipe Size	Pipe Sch.	Pipe Material	Origination Point	Termination Point	Termination Rating	Termination Type	Termination Material	Paint	Insulation
F-1	Pilot Gas Line	1	1"	Sch 80	A106-B	Base of Stack	Flare Tip	3000#	Thrd Union	A-105	Inorganic Zinc	n/a
F-1	TC Conduit	3	1/2"	n/a	316 SS	Near Grade	Flare Tip	n/a	Tubing	316 SS	n/a	n/a
F-1	HEI Conduit	1	1-1/2"	Std.	Carbon Steel	Near Grade	Flare Tip	n/a	Coupling	Carbon Steel	Galvanized	n/a

Notes:
1. All utility piping larger than 2" will be supplied in pre-fabricated spools.
2. Piping 2" and smaller will be supplied in random lengths for field fabrication and installation by others.
3. Base of Stack = Approximate Flare Stack Inlet Elevation.

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Attachment E

Spare Parts

- Spare Parts for Start-up & Commissioning
- Spare Parts for Two Years Operation

Spare Parts for Start-up and Commissioning

Client:	Targa Resources, Inc.	Zeeco Ref.:	2023-10875FL-01	Date:	29-Sep-23
Location:	Texas	Client Ref.:	0	Rev.	0

Part No.	Qty	Description	Unit Price	Delivery (Weeks)
	1	Pilot Temperature Switch		4
	1	Pilot Thermocouple		4
	1	Electric Ignitor Probe Assembly		4
	1	HEI Ignition Module		4
	2	Pilot Light Bulb		4
	1	Pressure Gauge (Pilot Fuel Gas)		4

Net Price: U. S. Dollars

Minimum Invoice:

F.O.B. Point: Shop Door - Broken Arrow, OK, USA

Terms: Net 30 Days

Notes:
1. Prices are subject to change without notice.
2. The spare part items and quantities listed above are preliminary and are subject to change upon determination of final scope of supply.

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Spare Parts for Two Years Operation

Client:	Targa Resources, Inc.	Zeeco Ref.:	2023-10875FL-01	Date:	29-Sep-23
Location:	Texas	Client Ref.:	0	Rev.	0

Part No.	Qty	Description	Unit Price	Delivery (Weeks)
	2	Pilot Temperature Switch		4
	2	Pilot Thermocouple		4
	1	HSLF-Z-HEI-1T/C		4
	1	Electric Ignitor Probe Assembly		4
	2	HEI Ignition Module		4
	4	Pilot Light Bulb		4

Net Price: U. S. Dollars

Minimum Invoice:

F.O.B. Point: Shop Door - Broken Arrow, OK, USA

Terms: Net 30 Days

Notes:
1. Prices are subject to change without notice.
2. The spare part items and quantities listed above are preliminary and are subject to change upon determination of final scope of supply.

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Attachment F

Clarifications and Exceptions

Clarifications & Exceptions

Client:	Targa Resources, Inc.	Zeeco Ref.:	2023-10875FL-01	Date:	29-Sep-23
Location:	Texas	Client Ref.:	0	Rev.	0

Please note that it is Zeeco's intention to comply with the specifications received with this inquiry, except as noted below. Please also note that we have done our best to clearly specify what our proposal includes in order to avoid confusion. In the event that any portion of our quotation other than the list below does not meet your specifications or fit your needs, please notify us immediately so that we may rectify the situation.

No.	Specification	Item	Clarification / Exception
1	General	Applicable Specifications	Zeeco is not responsible for specifications not included in the inquiry package or revised after the issuance of the PO. We can provide a cost impact (if any) to meet any particular new or revised specification after receiving the specification.
2	General	Special Tools	No special tools are required for operation or maintenance of the proposed system.
3	General	Spare Parts	Spare parts are listed and quoted separately.
4	General	Assistance / Training	Assistance / training at the job site, or attendance to any meetings outside Zeeco, is available based on our attached per diem rate sheet.
5	General	Sizing	Sizes / dimensions / weights / models noted in this quotation are preliminary only and subject to change upon final equipment design after an order is received.
6	General	Documentation	All required documentation will be submitted in .pdf format and submitted in soft copy. Any hard copies for final documentation can be supplied for additional cost upon request. On receipt of drawing or document approvals, Zeeco will generate a Comment Resolution Form. This form will address all open comments and is to be reviewed and closed prior to any submittal of revised drawings or documents.
7	General	Performance Bonds / Guarantees	Any performance bond or bank guarantee issued by Zeeco for this project will be in the form of a standby letter of credit. The format of this standby letter of credit is to be mutually agreeable to both Zeeco and our customer, subject to the requirements outlined in ICC Publication 500 (Uniform Customs and Practices for Documentary Credits).
8	General	Terms & Conditions	All Terms & Conditions shall be mutually agreed upon prior to issuance of PO.

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Clarifications & Exceptions

9	General	Pricing & Invoices	Unless noted, all prices are US Dollars. Any amounts owed by Buyer under this contract that are not paid when due shall bear interest, from the time the payment was due until the time paid, at a rate of one and a half percent (1.5%) per month, or the maximum allowed by law, whichever is lower.
10	General	Pricing & VAT/GST	Unless specifically noted otherwise, our pricing is exclusive of any local VAT/GST or other taxes/duties in the country of installation.
11	General	Limit of Liability	Sellers total liability for this purchase order, whether in contract, tort, or otherwise, shall in no event exceed the total amount of the purchase order. In no event shall seller be liable to the buyer for delays, curtailment of plant operation, process failure, loss of profits, or any indirect, incidental, special or consequential damages.
12	General	Warranty	Consumables such as, but not limited to, bulbs, fuses, thermocouples, gaskets, etc. shall be outside the scope of the above warranties. All warranty work is considered applicable "at grade" for elevated flare systems. Warranty is for material and workmanship only. Except as defined in the contract, there are no warranties, express or implied, of merchantability, fitness for use or otherwise.
13	General	Noise Measurement	Noise is predicted as +/- 3 dB(A) considering a background noise level of 6 dB(A) less than the measurement point in each frequency.
14	Clarification	Flare Tip Inlet Flange Material	Please note that our proposal is based on supplying a tip inlet connection flange that is the same material as the connection flange on the top of the stack in an effort to minimize the thermal expansion differences within the flange material and thus lower the possibility of gas leakage at the flange.
15	Clarification	Smokeless Flaring	Smokeless requirement is estimated as Ringelmann 1.0 or less at one flame length from the end of the flame per EPA Test Methods 9, at steady state process and environmental conditions.
16	General	Ignition Rack Pipe Testing	B31.3 requires a hydrostatic leak test unless "The Owner" considers a hydrostatic test impractical. We do not hydrostatic-test the piping components of the ignition system. The use of water can damage some of the components as well as cause internal corrosion, which could be detrimental to the operation of the equipment. It is Zeeco's policy to pneumatically pressure test the piping using shop air (90 psig max) and soapy-water on our ignition rack piping.
17	Clarification	Nozzle Loads	The offered equipment has been designed considering maximum nozzle loads as stated in API 537 standard “Flare Details for General Refinery and Petrochemical Service”.

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Clarifications & Exceptions			
18	General	Inspection and Testing	Testing, NDE, and inspection performed for all Zeeco designed proprietary components of the system (pilot, mixer, flare tip, ignition chamber, etc.) will be per Zeeco standards unless specifically noted otherwise.
19	General	Stack Riser Designs	Stack risers are structural members open to atmosphere and therefore are not considered as piping or pressure vessels. Any piping specification, applicable pipe class to the flare header or pressure vessel specification is not applicable to the flare stack riser. Only the flare stack inlet flange will meet the pipe class applicable to the flare header. In addition, the flare stack riser will follow B31.3 for thickness, internal pressure and NDE (spot RT). Hydrostatic, PWHT or impact testing of the stack risers in the shop is not required and has not been included.
20	General	Equipment Storage	If equipment is not picked up or shipped from Zeeco's shop or other designated sub-fabricators / suppliers within 6 weeks from the notification date that equipment is ready to ship, storage and handling fees will be applied based on the size and storage requirements of the equipment.
21	General	Export Packing / Crating / Containerization	Export crating, when included or offered as an option, provides for break bulk packing of smaller materials in wooden crates or pallets, and skid mounting and bundling of larger components for deck shipment. Packaging for large items is not designed for stacking. Containerization of any material is not included. If materials are quoted as FOB Port of Export basis, or if optional pricing is provided to move the goods to the port of export, this is understood to mean the port nearest to the point of manufacture of the goods, unless an alternative port of export is clearly defined in the inquiry documents.
22	Clarification	Pilot Ignition Rack	Zeeco's proposal is based on the pilot ignition rack located within 600 Feet (185 Meters) from the pilots. If the distance between the ignition rack and pilots is more than 600 Feet (185 Meters), Zeeco shall be notified as the design of the ignition system may need slight modification. FFG system performance is based on the use of nominal 1 inch diameter schedule 40 ignition lines. Additionally, Zeeco requires the use of swing type check valves for air and fuel gas service on FFG ignition racks. Due to operating pressure and flow rates, piston (lift) type check valves in this service may prevent the FFG from lighting the
23	General	Motor Starters	Our proposal does not include for any motor starters, variable frequency drives, or motor controls unless specifically stated otherwise.

Clarifications & Exceptions			
24	General	Lifting Lugs	Zeeco recommends handling flare tip assemblies using slings and straps. If flare tip lifting lugs are supplied, they will be defined as being included on the Zeeco flare tip datasheet. Any lifting lugs supplied on a flare tip are designed for vertical lifting only, lifting along the major axis of the flare tip. Lifting lugs will be carbon steel designed for use when initially installing the flare tip prior to any use of possible heat damage to same. Lifting lugs should not be re-used after the flare tip has been in operation due to safety issues.
25	General	Piping	Piping 2" and smaller will be supplied in random lengths with loose fittings, for field fabrication and installation by others. Fittings are supplied without paint. Pipe joints are prime painted only.
26	General	Radiographic Examination	Radiographic examination, when included, shall be performed by gamma-ray (Iridium 192) radiography. The radiographic sensitivity shall be equal to or better than that specified in the ASME Boiler & Pressure Vessel Code, Section VIII-1 and B31.3.
27	General	Damages	In no event shall seller be liable to the buyer for delays, curtailment of plant operation, process failure, loss of profits, or any indirect, incidental, special or consequential damages.
28	General	Written Communication	Zeeco Inc.'s offer is based on all resulting orders and documents and correspondence with Zeeco Inc. being in the English language.
29	General	Approved Manufacturer's Lists (AML)	All proprietary items including flare tip assemblies, flare tip accessories (steam / gas risers, steam / gas manifolds, etc.), liquid seal internals, gas seals, pilot assemblies, etc. shall follow Zeeco's AML in conjunction with Zeeco's ISO requirements. All process and utility connections for flare tip assemblies, gas seals, pilots, etc. shall meet any applicable project AML if separately provided to Zeeco and agreed.
30	General	Materials of Origin	Zeeco confirms its proposal is in full compliance with received project material sourcing requirements for all non-proprietary components. For any proprietary components and small bore (2" and less) commodity valves critical to proper operation of the system and to the Zeeco performance guarantee of the system, Zeeco will use its normal stock components and castings in which many of our casting are sourced from Chinese foundries, which Zeeco have used for many years and have partnering relationships with. These casting are stocked in Zeeco's facility and all machining is performed in our facility to Zeeco standards and Zeeco NDE requirements.

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Clarifications & Exceptions			
31	General	Purge Rates	Please note, the purge gas rate we have quoted is the minimum purge gas recommended to ensure the safety of the upstream systems, and to prevent flashbacks from occurring in the flare stack. If the flare system will be required to meet the proposed EPA Combustion Zone Net Heating Value requirements for Flares, it is likely this purge gas flow rate will have to be increased above our stated quantity. The gas required to meet the CZNHV requirements is a function of the turndown capability of the control system applied for the assist medium.
32	General	Pipe Specification Conformation	Any project pipe specification will be applicable up to the pilot inlet connections only: FFG Ignition Connection and Pilot Gas Manifold Connection (more than one pilot) or Pilot Gas Connection (when no manifold is included).
33	General	Stack Foundation Type	For the purpose of the flare structural calculations, Zeeco has assumed an elastic foundation type per ASME STS-1. Please advise if rigid foundation type is to be considered
34	General	Point of Manufacture / Material Selection when Utilizing India or China Fabrication	Structural plates, pipes and shapes will be to IS/GB standards, but will not be less in Tensile Properties than the minimum specified in ASTM A36 / A36M or equivalent for plates and shapes and A53B or equivalent for pipe.
35	Clarification	Blower	Zeeco will supply (1) vane axial blower and associated motor. Any VFD or other controls are outside of Zeeco's scope of supply.
36	Clarification	Exit Velocity	Zeeco has considered maximum exit velocity as per 40 CFR for normal operating conditions. Zeeco understands normal operating conditions to be continuous purge. Zeeco has not considered these exit velocity requirements for any emergency releases.
37	Clarification	Paint	Zeeco has only considered painting of the external air riser. Internal Gas riser will be primered only.
38	Clarification	Flare Design	The Flare Design is based on the same design as the Greenwood I Gas Plant Flare. Any associated drawings and documentation will be submitted for information only.
39	Clarification	Thermocouple	Pilot Thermocouples will be retractable, duplex type. One element per thermocouple will be monitored at ignition control panel, with the other terminated at the JB at the base of the stack, acting as a spare.
40	Clarification	Blower	Zeeco has considered supply of a 150 hp blower as requested. Blower would provide for necessary air needed for smokeless flaring of rates indicated within Proposal Attachment C. Please note, as blower will be vane axial type, motor enclosure would be Totally Enclosed, Air Over (TEAO) rather than TEFC. Blower will be VFD compatible, with any VFD Device Provided by others.

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Clarifications & Exceptions			
41	Clarification	Allowable Pressure	The allowable pressure for each gas case was not given, therefore Zeeco has confirms that a minimum of 10 psig will be required at the base of the stack.

Confidential and Proprietary

Attachment G

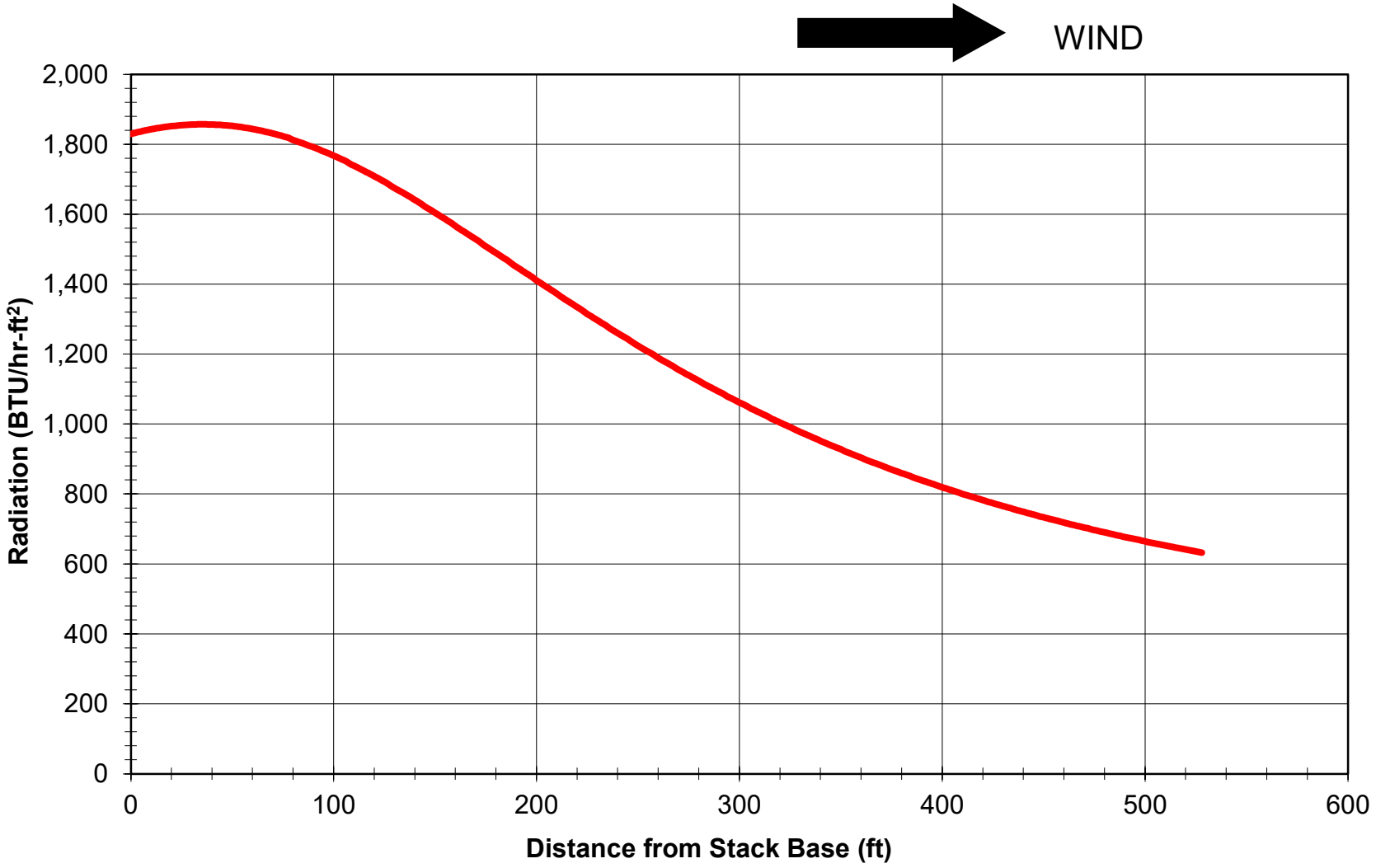
Start-up & Maintenance Services

Refer to priced proposal

Attachment H

Radiation Profile

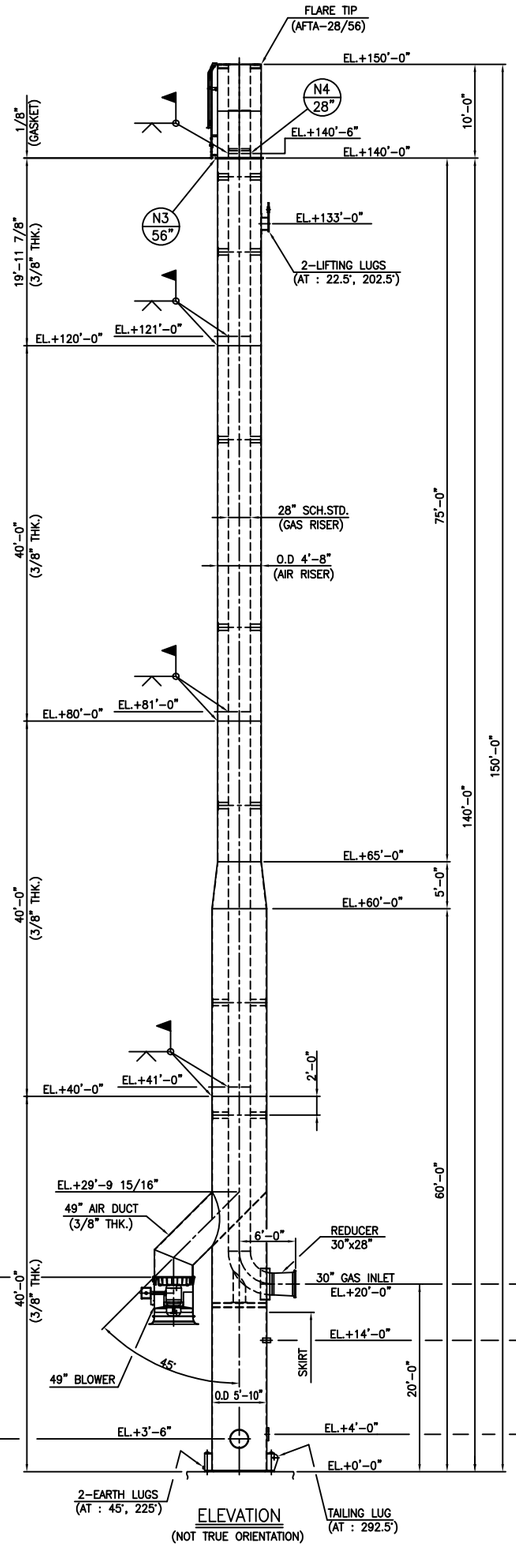
Zeeco Quotation Ref: 2023-10875FL-01 Rev. 0
Radiation At Grade Versus Distance From Stack Base
Stack Height = 150 ft ; Relative Humidity = 70%
Solar Radiation Included = 300 BTU/hr-ft^2 ; Wind Speed = 30 ft/s
Flare Tag No. = F-1 ; Operating Case = IP Broken Arrow



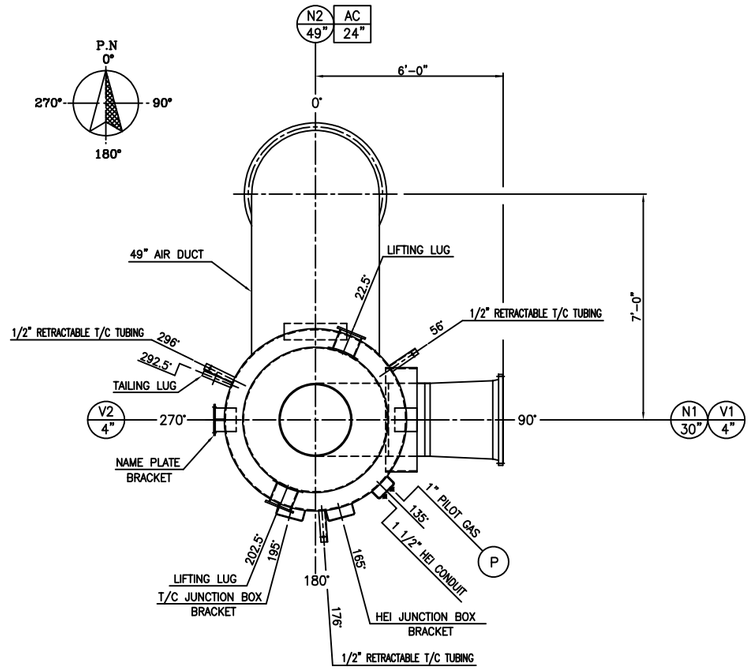
Confidential and Proprietary

Attachment I

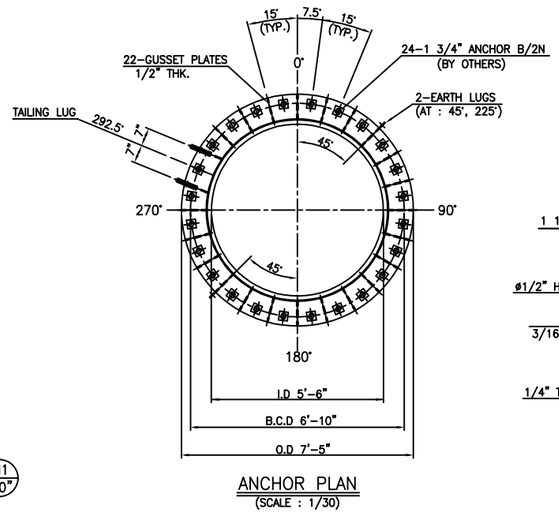
Typical GA Drawing



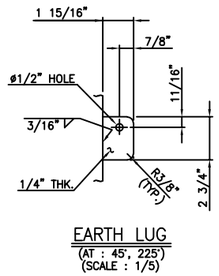
ELEVATION
(NOT TRUE ORIENTATION)



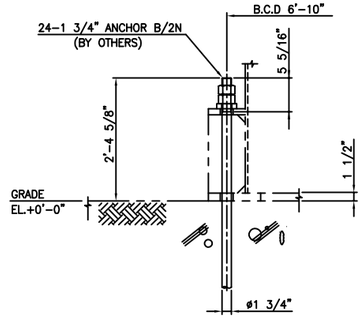
NOZZLE ORIENTATION
(SCALE : 1/30)



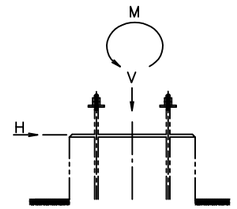
ANCHOR PLAN
(SCALE : 1/30)



EARTH LUG
(AT : 45°, 225°)
(SCALE : 1/5)

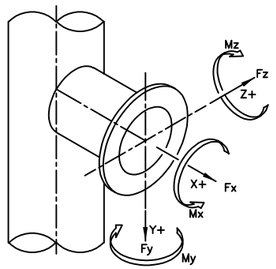


ANCHOR BOLT
(SCALE : NONE)



LOADING DATA			
LOAD CASE	VERTICAL (KIPS)	SHEAR (KIPS)	MOMENT (KIP-FT)
DEAD LOAD	72.1	0.0	0.0
WIND LOAD	0.0	22.0	1668.8
SEISMIC LOAD	1.5	1.0	108.7
NOZZLE LOAD	1.3	1.6	33.7

LOADING DATA
(FOR STACK)



PIPE SIZE (IN)	Fx	Fy	Fz	Mx	My	Mz
	lb	lb	lb	lb-ft	lb-ft	lb-ft
30	850	1150	1150	1630	1200	1200

MAX. ALLOWABLE INLET NOZZLE LOADS
(PER API560/537)

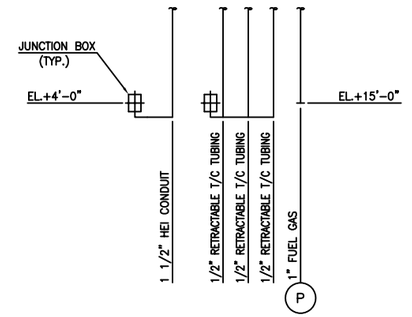
MATERIAL SPECIFICATIONS		DESIGN DATA		
GAS RISER	A53-B ERW OR EQ.	TYPE		SELF SUPPORTED
AIR RISER	A36 OR EQ.	DESIGN CODE		ASME STS-1 / AISC
SKIRT	A36 OR EQ.	WIND LOAD	WIND DESIGN CODE	ASCE 7-10
FLARE TIP	SEE FLARE TIP DWG.		EXP.	C
BASE PLATE	A36		WIND SPEED	120 mph
GAS RISER FLANGE	A105.		CATEGORY	III
AIR RISER FLANGE	A36	SEISMIC LOAD	SEISMIC DESIGN CODE	ASCE 7-10
RISER GASKET	C4401 OR EQ.		SITE CLASS	D
FITTING	A234-WPB		Ss	0.098
LIFTING LUGS / PAD	A36		S1	0.031
TAILING LUG	A36		I.F	1.25
EARTHING LUGS	304 S.S	DESIGN PRESS. (GAS/AIR)		50 / 2 psig
NAME PLATE	304 S.S	DESIGN TEMP. (GAS/AIR)		-20~400 / -20~120 °F
NAME PLATE BRACKET	A36	OPERATING PRESSURE (GAS/AIR)		0~31.4 / ATM psig
FUEL GAS	A106-B	OPERATING TEMP. (GAS/AIR)		26~104 / AMB °F
FLANGE CONN. STUD BOLT/NUT	A193-B7/A194-2H	C.A (GAS/AIR)		1/16"
ANCHOR BOLT (BY OTHERS)	A307-C	PAINTING		SEE NOTE 2
RETRACTABLE TUBING	316SS TUBING	NDE		AS PER ITP
CONDUIT	C.S+GALV.			

NOZZLE AND CONNECTIONS

MARK	Q'TY	SIZE	SCH.	RATING	FACING	FLG.MAT'L	NOZZLE MAT'L	SERVICE	REMARKS
N1	1	30"	STD.	ASME B16.47 SERIES "B" 150#	WN, RF	A105	A53-B ERW OR EQ.	GAS INLET	6'-0"
N2	1	49"	3/8" THK.	FABRICATED PLATE		A36 OR EQ.	A36 OR EQ.	AIR INLET	
N3	1	56"	3/8" THK.	FABRICATED PLATE		A36 OR EQ.	A36 OR EQ.	AIR OUTLET	
N4	1	28"	STD.	PIPE END		-	A53-B ERW OR EQ.	GAS OUTLET	
V1,2	2	4"	40	-	-	-	A53-B ERW	VENT HOLES	
AC	1	24"	3/8" THK.	-	-	-	A36	ACCESS HOLE	
P	1	1"	80	ASME 150#	SW, RF	A105	A106-B	FUEL GAS	

NOTE

1. FLANGE BOLTING TO STRADDLE CENTERLINES INDICATED BY CENTERLINE UNLESS NOTED OTHERWISE.
2. PAINTING
   - EXTERNAL CARBON STEEL SURFACE
     * SURFACE PREPARATION : SSPC-SP10
     * PRIMER : SHERWIN-WILLIAMS ZINC CLAD II(B69V3) - 3 ~ 4 MILS
     * FINAL : SHERWIN-WILLIAMS HEAT-FLEX HI-TEMP 1000(B59-820) - 1.5 ~ 2MILS
     * COLOR: SHERWIN WILLIAMS SW-4031 STRUCTURAL GRAY
   - GAS RISER, SKIRT INSIDE, TEMPLATE, AND SHIP LOOSE UTILITY PIPING
     * SURFACE PREPARATION : SSPC-SP10
     * PRIMER ONLY : SHERWIN-WILLIAMS ZINC CLAD II(B69V3) - 3 ~ 4 MILS
     * FINAL COAT OF PAINT ONLY NECESSARY FOR UTILITY PIPING, BY OTHERS.
3. PIPING 2" AND SMALLER WILL BE SUPPLIED IN RANDOM LENGTHS WITH LOOSE FITTINGS, FOR FIELD FABRICATION AND INSTALLATION BY OTHERS, FITTINGS ARE SUPPLIED WITHOUT PAINT, PIPE JOINTS ARE PRIME PAINTED ONLY.
4. CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS , FC' = 4000 PSI
5. LOADING DATA INCLUDES OVERAGE FACTOR OF 10% ABOVE CALCULATED LOADS.
6. FLARE STACK STRUCTURAL DESIGN ASSUMES ELASTIC FOUNDATION SUPPORT PER ASME STS-1.
7. ALL SHIP LOOSE UTILITY PIPING CARBON STEEL FITTINGS TO BE SHIPPED IN THE BLACK.



UTILITY PIPING ELEVATION
(SCALE : NONE)

NO	DATE	REVISION DESCRIPTION	BY	CKD	APP.
0	18NOV22	ISSUED FOR INFORMATION	HMC	HMC	CTM

JOBSITE: GREENWOOD GAS PLANT (MIDLAND, TX)

END USER: TARGA PIPELINE MID-CONTINENT WESTTEX LLC

S.O. NO.: 59777 | P.O. NO.: TAR264073 | APP CTM

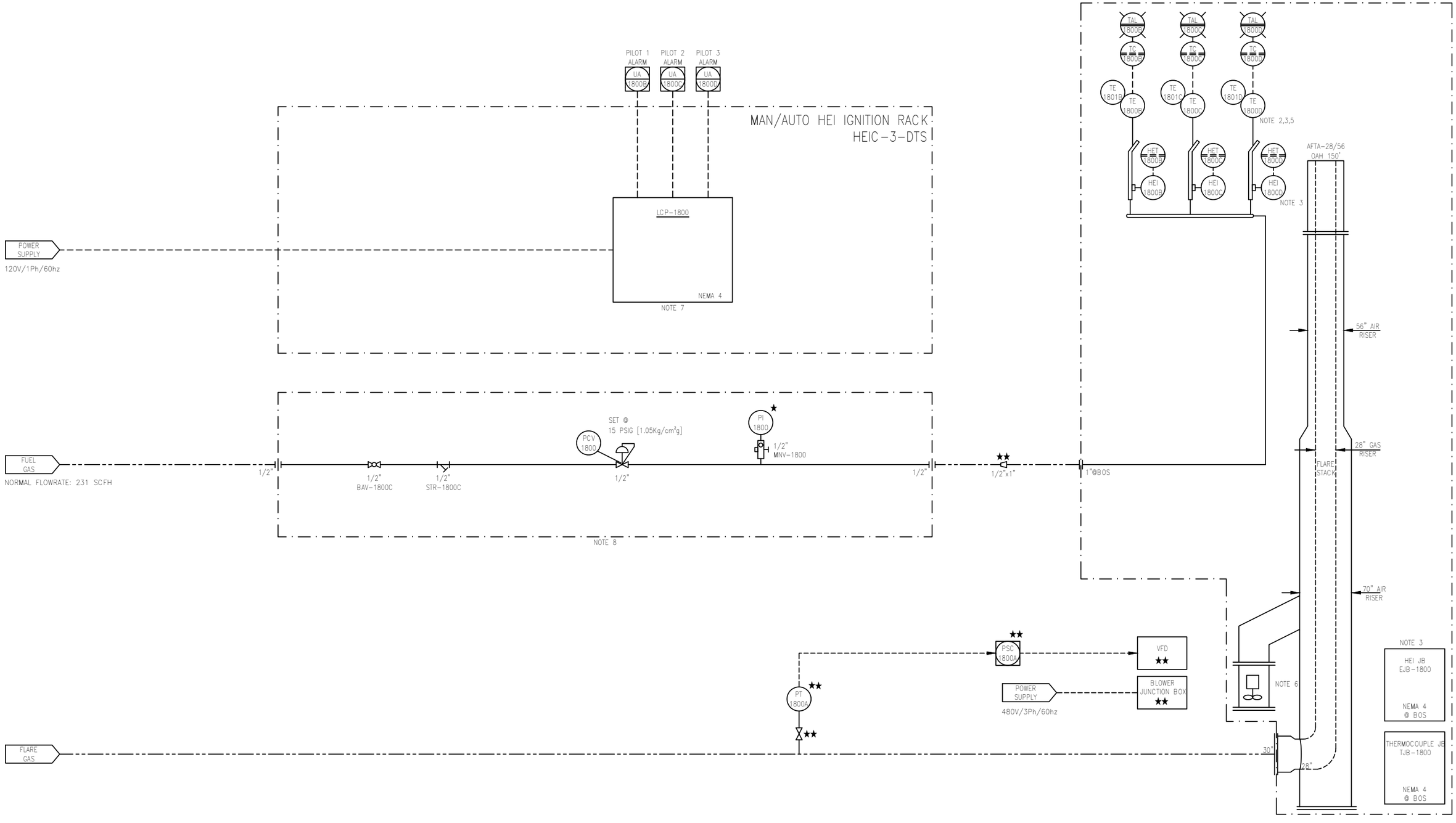
ZEECO, INC.
22151 EAST 91st STREET
BROKEN ARROW, OK 74014
PHONE: (918) 258-8551
FAX: (918) 251-5519
www.zeeco.com
sales@zeeco.com

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.

GENERAL ARRANGEMENT WITH LOADING DATA (FL-1800)

FOR: TARGA PIPELINE MID-CONTINENT WESTTEX LLC

DRAWN HMC | DATE 18NOV22
CHK HMC | APP LA
SCALE 1/100 | REV 0
DRAWING NUMBER SE-2506
SHT. 1 OF 1



LEGEND:

- PIPING
- PIPING BY OTHERS
- ELECTRICAL
- DCS SOFTWARE
- ZEECO SCOPE LIMITS
- 316SS TUBING & FITTINGS (SWAGELOK OR EQUAL) 3/8" UNLESS NOTED OTHERWISE
- ★ ITEMS FURNISHED BY ZEECO AND INSTALLED BY OTHERS
- ★★ ITEMS FURNISHED AND INSTALLED BY OTHERS
- BOS BASE OF STACK

NOTES:

1. AREA CLASSIFICATION: NON-HAZARDOUS.
2. THERMOCOUPLES ARE DUPLEX TYPE K, RETRACTABLE.
3. THERMOCOUPLE/HEI WIRING BETWEEN JUNCTION BOXES AT BASE OF FLARE STACK AND LOCAL CONTROL PANEL IS SUPPLIED AND INSTALLED BY OTHERS.
4. FUEL GAS SUPPLY FOR PILOT OPERATION IS CONTINUOUS.
5. THE PILOT THERMOCOUPLE IS FOR ON/OFF INDICATION ONLY. IT IS NOT FOR ACCURATE MEASUREMENT OF THE PILOT FLAME TEMPERATURE.
6. BLOWER IS 150 HP TEAO, VFD DUTY.
7. CONTROL PANEL TO BE INSTALLED ON RACK.
8. PILOT FUEL GAS REGULATION TRAIN SHALL BE SHIPPED LOOSE.

NO.	DATE	REVISION DESCRIPTION	BY	CKD.	APP.
0	21NOV22	ISSUED FOR INFORMATION	SC	RM	LA

JOB SITE: GREENWOOD GAS PLANT, (MIDLAND, TX)

END USER: TARGA PIPELINE MID-CONTINENT WESTTEX LLC

S.O. NO.: 59777 | P.O. NO.: TAR264073 | APP CTM

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PIPING AND INSTRUMENT DIAGRAM

DRAWN	DATE
SC	21NOV22
CHK	APP
RM	LA
SCALE	REV
NONE	0

FOR: TARGA PIPELINE MID-CONTINENT WESTTEX LLC

DRAWING NUMBER: YA-4196 SHT. 1 OF 1

Attachment J

ISO &ASME Sec. VIII Code Certificates

Certificate of Registration

This certifies that the Quality Management System of

Zeeco, Inc.

22151 E. 91st Street
Broken Arrow, Oklahoma, 74014, United States

has been assessed by NSF-ISR and found to be in conformance to the following standard(s):

ISO 9001:2015

Scope of Registration:
Design, manufacture, installation, and testing of flares, burners, and incinerators.

Certificate Number:	0Z911-IS6
Certificate Issue Date:	03-AUG-2018
Registration Date:	02-AUG-2018
Expiration Date *:	01-AUG-2021

Carl Blazik,
Director, Technical
Operations & Business Units,
NSF-ISR, Ltd.

NSF International Strategic Registrations
789 North Dixboro Road, Ann Arbor, Michigan 48105 | (888) NSF-9000 | www.nsf-isr.org

Authorized Registration and /or Accreditation Marks. This certificate is property of NSF-ISR and must be returned upon request.
*Company is audited for conformance at regular intervals. To verify registrations call (888) NSF-9000 or visit our web site at www.nsf-isr.org

CERTIFICATE OF AUTHORIZATION

The named company is authorized by the American Society of Mechanical Engineers (ASME) for the scope of activity shown below in accordance with the applicable rules of the ASME Boiler and Pressure Vessel Code. The use of the certification mark and the authority granted by this Certificate of Authorization are subject to the provisions of the agreement set forth in the application. Any construction stamped with this certification mark shall have been built strictly in accordance with the provisions of the ASME Boiler and Pressure Vessel Code.

COMPANY:

Zeeco, Inc.
22151 East 91st Street
Broken Arrow, Oklahoma 74014

SCOPE:

Manufacture and assembly of power boilers at the above location and field sites controlled by the above location

AUTHORIZED: **June 27, 2018**

EXPIRES: **August 20, 2021**

CERTIFICATE NUMBER: **29,790**

Richard R. Stevenson
Board Chair, Conformity Assessment

Managing Director, Conformity Assessment

The American Society of Mechanical Engineers

CERTIFICATE OF AUTHORIZATION

The named company is authorized by the American Society of Mechanical Engineers (ASME) for the scope of activity shown below in accordance with the applicable rules of the ASME Boiler and Pressure Vessel Code. The use of the certification mark and the authority granted by this Certificate of Authorization are subject to the provisions of the agreement set forth in the application. Any construction stamped with this certification mark shall have been built strictly in accordance with the provisions of the ASME Boiler and Pressure Vessel Code.

COMPANY:

Zeeco, Inc.
22151 East 91st Street
Broken Arrow, Oklahoma 74014

SCOPE:

Manufacture of pressure vessels at the above location and field sites controlled by the above location (This authorization does not cover impregnated graphite)

AUTHORIZED: **June 27, 2018**

EXPIRES: **August 20, 2021**

CERTIFICATE NUMBER: **29,791**

Board Chair, Conformity Assessment

Managing Director, Conformity Assessment

The American Society of Mechanical Engineers

Attachment K

Sample Inspection and Test Plan

	Zeeco, Inc. Quality Assurance Manual, Volume II	
	Inspection and Test Plan	
	Document #: ZQS-QUA-IV-160	**Revision:** **0**
	Created By: Bobby Martin	**Revision Date:** **7/1/03**

PROJECT:	LEGACY GAS PLANT FLARE FL-1800	ITP NUMBER:	51592-4010	LEGEND	
SHOP ORDER NUMBER:	51592	REVISION NUMBER:	0	W-WITNESS	M-MONITOR
PURCHASE ORDER NUMBER:	TAR194452	PAGES:	3	R-REVIEW	I-IN HOUSE
TAG NUMBER:	FL-1800			H-HOLD	S-SUBCONTRACTORS
SUPPLIER CONTACT:	JOSHUA HARRISON			V-VERIFY	SW-SPOT WITNESS
DESCRIPTION:	SELF SUPPORTED AIR FLARE SYSTEM				

TASK NUMBER		TASK DESCRIPTION	LOCATION CODE (I OR S)	PROCEDURE	ACCEPTANCE CRITERIA	VERIFYING DOCUMENT	INSPECTION REQUIREMENTS V/W/H/R/O PROJECT INSPECTION (INSPECTOR TO INITIAL)				NOTES
							SUB	ZEECO			
A		**APPROVALS**									
	A1	PRE-INSPECTION MEETING	I	PROJECT	PROJECT	PROJECT		H			
	A2	WPS & PQR	I/S	ASME SECT. IX	ASME SECT IX	QW-482 & 483	H	H			NOTE 1
	A3	WELDER QUALIFICATION	I/S	ASME SECT. IX	ASME SECT IX	QW-484	H	H			
	A4	NDE QUALIFICATION	S	ASNT SNT-TC-1A	ASNT SNT-TC-1A	CERTIFICATE	H	H			
	A5	NDE PROCEDURES	S	GLOBE	ASME	PROCEDURES	H	H			NOTE 2
	A6	PAINT PROCEDURES	I/S	PROJECT	PROJECT	PROJECT	H	H			
		ZEECO USA									**MDMT = -20F**
1.0		**AFTA-28/56**									
		AIR PLENUM									
	1.1	MATERIAL CONFORMANCE	I	ASTM	ASTM	PO/BOM		R			
	1.2	MATERIAL IDENTIFICATION	I	ASTM	ASTM	MTR		W			
	1.3	*IN-PROCESS INSPECTION*									
		A. DIMENSIONAL INSPECTION	I	DRAWING	DRAWING	DRAWING		V			
		B. VISUAL INSPECTION	I	DRAWING	DRAWING	DRAWING		V			
		C. WELD INSPECTION	I	DRAWING	DRAWING	DRAWING		V			
	1.4	*NON-DESTRUCTIVE EXAMINATION*									
		A. RADIOGRAPHY - SPOT	S	GLOBE I-B	ASME VIII-1, UW-52	REPORT		R			NOTE 6
		GAS RISER									
	1.5	MATERIAL CONFORMANCE	I	ASTM	ASTM	PO/BOM		R			**EN 10204 3.1 CERTIFICATION**
	1.6	MATERIAL IDENTIFICATION	I	ASTM	ASTM	MTR		W			
	1.7	*IN-PROCESS INSPECTION*									
		A. DIMENSIONAL INSPECTION	I	DRAWING	DRAWING	DRAWING		V			
		B. VISUAL INSPECTION	I	DRAWING	DRAWING	DRAWING		V			
		C. WELD INSPECTION	I	DRAWING	DRAWING	DRAWING		V			
	1.8	*NON-DESTRUCTIVE EXAMINATION*									
		A. RADIOGRAPHY - SPOT	S	GLOBE I-B	ASME VIII-1, UW-52	REPORT		R			NOTE 6
		PILOTS (QTY. 3) W/ MANIFOLD									
	1.9	MATERIAL CONFORMANCE	I	ASTM	ASTM	PO/BOM		R			**EN 10204 3.1 CERTIFICATION**
	1.10	MATERIAL IDENTIFICATION	I	ASTM	ASTM	MTR		W			
	1.11	*IN PROCESS INSPECTION*									
		A. DIMENSIONAL INSPECTION	I	DRAWING	DRAWING	DRAWING		V			
		B. VISUAL INSPECTION	I	DRAWING	DRAWING	DRAWING		V			
		C. WELD INSPECTION	I	DRAWING	DRAWING	DRAWING		V			
		FINAL INSPECTION									
	1.12	TEST FIT OF PILOTS AND MANIFOLD TO FLARE TIP	I	DRAWING	DRAWING	PICTURES		W			
	1.13	DIMENSIONAL INSPECTION	I	DRAWING	DRAWING	REPORT		W			
	1.14	VISUAL INSPECTION	I	DRAWING	DRAWING	REPORT		W			
	1.15	WELD INSPECTION	I	WPS	ASME IX	ITP SIGN OFF		W			
		COATING INSPECTION									
	1.16	SURFACE PREPARATION	I	DRAWING	SSPC	REPORT		R			CS ONLY
	1.17	MEK RUB TEST	I	ASTM D4752	ASTM D4752	REPORT		H			INORGANIC ZINC PRIMER
	1.18	COATING INSPECTION	I	DRAWING	DFT/MILLAGE	REPORT		W			CS ONLY
	1.19	CLEANING/PAINT TOUCH-UP	I	DRAWING	DRAWING	DRAWING		H			

			PROJECT:	LEGACY GAS PLANT FLARE FL-1800		ITP NUMBER:	51592-4010			LEGEND	
			SHOP ORDER NUMBER:	51592		REVISION NUMBER:	0			W-WITNESS	M-MONITOR
			PURCHASE ORDER NUMBER:	TAR194452		PAGES:	3			R-REVIEW	I-IN HOUSE
			TAG NUMBER:	FL-1800						H-HOLD	S-SUBCONTRACTORS
			SUPPLIER CONTACT:	JOSHUA HARRISON						V-VERIFY	SW-SPOT WITNESS
			DESCRIPTION:	SELF SUPPORTED AIR FLARE SYSTEM							

TASK NUMBER		TASK DESCRIPTION	LOCATION CODE (I OR S)	PROCEDURE	ACCEPTANCE CRITERIA	VERIFYING DOCUMENT	INSPECTION REQUIREMENTS V/W/H/R/O PROJECT INSPECTION (INSPECTOR TO INITIAL)				NOTES
							SUB	ZEECO			
2.0		**IGNITION RACK ASSEMBLY WITH PANEL**									
	2.1	MATERIAL CONFORMANCE	I	ASTM	ASTM	PO/BOM		R			**EN 10204 3.1 CERTIFICATION FOR PRESSURE PARTS**
	2.3	*IN PROCESS INSPECTION*									
		A. DIMENSIONAL INSPECTION	I	DRAWING	DRAWING	DRAWING		V			
		B. VISUAL INSPECTION	I	DRAWING	DRAWING	DRAWING		V			
		C. WELD INSPECTION	I	WPS	ASME IX	ITP SIGN OFF		H			
		COATING INSPECTION									
	2.4	SURFACE PREPARATION	I	DRAWING	SSPC	REPORT		R			CS ONLY
	2.5	MEK RUB TEST	I	ASTM D4752	ASTM D4752	REPORT		H			INORGANIC ZINC PRIMER
	2.6	COATING INSPECTION	I	DRAWING	DFT/MILLAGE	REPORT		W			CS ONLY
		FINAL INSPECTION									
	2.7	DIMENSIONAL INSPECTION	I	DRAWING	DRAWING	REPORT		H			
	2.8	VISUAL INSPECTION	I	DRAWING	DRAWING	REPORT		H			
	2.10	FACTORY ACCEPTANCE TEST	I	FUNCTIONAL	DATA SHEET	CHECKLIST		H			
	2.12	CLEANING/PAINT TOUCH-UP	I	DRAWING	DRAWING	DRAWING		H			
3.0		**FUEL GAS SPOOL**									**SHIPPED LOOSE FROM RACK**
	3.1	MATERIAL CONFORMANCE	I	ASTM	ASTM	PO/BOM		R			**EN 10204 3.1 CERTIFICATION FOR PRESSURE PARTS**
	3.2	MATERIAL IDENTIFICATION	I	ASTM	ASTM	MTR		V			
	3.3	*IN PROCESS INSPECTION*									
		A. DIMENSIONAL INSPECTION	I	DRAWING	DRAWING	DRAWING		V			
		B. VISUAL INSPECTION	I	DRAWING	DRAWING	DRAWING		V			
		C. WELD INSPECTION	I	WPS	ASME IX	ITP SIGN OFF		H			
		D. PNEUMATIC TEST BEFORE PAINT	I	ZQS-QUA-III-070	NO LEAKAGE	REPORT		W			70-120 PSIG MAX
		COATING INSPECTION									
	3.4	SURFACE PREPARATION	I	DRAWING	SSPC	REPORT		R			CS ONLY
	3.5	MEK RUB TEST	I	ASTM D4752	ASTM D4752	REPORT		H			INORGANIC ZINC PRIMER
	3.6	COATING INSPECTION	I	DRAWING	DFT/MILLAGE	REPORT		W			CS ONLY
		FINAL INSPECTION									
	3.7	DIMENSIONAL INSPECTION	I	DRAWING	DRAWING	REPORT		H			
	3.8	VISUAL INSPECTION	I	DRAWING	DRAWING	REPORT		H			
	3.9	PNEUMATIC TEST AFTER PAINT	I	ZQS-QUA-III-070	NO LEAKAGE	REPORT		H			70-120 PSIG MAX
	3.1	CLEANING/PAINT TOUCH-UP	I	DRAWING	DRAWING	DRAWING		H			
4.0		**BUYOUT ITEMS**									
	4.1	VANE AXIAL BLOWER	S	DATA SHEET	DATA SHEET	CERTIFICATE		R			
5.0		**SHIPPING INSPECTION @ ZEECO**									
	5.1	MARKING/TAGGING	I	PO/BOM	PO/BOM	PICTURES		H			
	5.2	PACKING INSPECTION	I	SPECIFICATION	DRAWING	PACKING LIST		H			
	5.3	INSPECTION RELEASE	I	PROJECT	PROJECT	RELEASE		H			
	5.4	**FINAL DOCUMENTATION REVIEW**	I	SPECIFICATION	SPECIFICATION	MDR		H			

PROJECT:	LEGACY GAS PLANT FLARE FL-1800			ITP NUMBER:	51592-4010				LEGEND		
SHOP ORDER NUMBER:	51592			REVISION NUMBER:	0				W-WITNESS	M-MONITOR	
PURCHASE ORDER NUMBER:	TAR194452			PAGES:	3				R-REVIEW	I-IN HOUSE	
TAG NUMBER:	FL-1800								H-HOLD	S-SUBCONTRACTORS	
SUPPLIER CONTACT:	JOSHUA HARRISON								V-VERIFY	SW-SPOT WITNESS	
DESCRIPTION:	SELF SUPPORTED AIR FLARE SYSTEM										

TASK NUMBER		TASK DESCRIPTION	LOCATION CODE (I OR S)	PROCEDURE	ACCEPTANCE CRITERIA	VERIFYING DOCUMENT	INSPECTION REQUIREMENTS V/W/H/R/O PROJECT INSPECTION (INSPECTOR TO INITIAL) SUB	ZEECO			NOTES
		SUBVENDOR									**MDMT = -20F**
6.0		**SELF SUPPORTED STACK ASSEMBLY**									
		AIR RISER									
	6.1	MATERIAL CONFORMANCE	S	ASTM	ASTM	PO/BOM	M	R			
	6.2	MATERIAL IDENTIFICATION	S	ASTM	ASTM	MTR	M	W			
	6.3	*IN PROCESS INSPECTION*									
		A. FIT-UP	S	DRAWING	DRAWING	DRAWING	M	SW			
		B. DIMENSIONAL INSPECTION	S	DRAWING	DRAWING	ITP SIGN OFF	M	W			
		C. VISUAL INSPECTION	S	DRAWING	DRAWING	ITP SIGN OFF	M	W			
		D. WELD INSPECTION	S	DRAWING	DRAWING	ITP SIGN OFF	M	W			
	6.4	BASE PLATE TEMPLATE INSPECION	S	DRAWING	DRAWING	ITP SIGN OFF	M	W			
	6.5	*NON-DESTRUCTIVE EXAMINATION*									
		A. RADIOGRAPHY-SPOT	S	PROCEDURE	ASME VIII-1, UW-52	REPORT	M	R			NOTE 6
		B. DYE PENETRANT OR MAGNETIC PARTICLE-100%	S	PROCEDURE	ASME VIII-I, APP. 6/8	REPORT	M	W			LIFTING DEVICES
		PRIMARY GAS RISER									
	6.6	MATERIAL CONFORMANCE	S	ASTM	ASTM	PO/BOM	M	R			**EN 10204 3.1 CERTIFICATION**
	6.7	MATERIAL IDENTIFICATION	S	ASTM	ASTM	MTR	M	W			
	6.8	*IN PROCESS INSPECTION*									
		A. FIT-UP	S	DRAWING	DRAWING	DRAWING	M	SW			
		B. DIMENSIONAL INSPECTION	S	DRAWING	DRAWING	ITP SIGN OFF	M	W			
		C. VISUAL INSPECTION	S	DRAWING	DRAWING	ITP SIGN OFF	M	W			
		D. WELD INSPECTION	S	DRAWING	DRAWING	ITP SIGN OFF	M	W			
	6.9	*NON-DESTRUCTIVE EXAMINATION*									
		A. RADIOGRAPHY-SPOT	S	PROCEDURE	ASME VIII-1, UW-52	REPORT	M	R			NOTE 6
		UTILITY PIPING AND CONDUIT									**SHIP LOOSE IN RANDOM LENGHTS**
	6.10	MATERIAL CONFORMANCE	S	ASTM	ASTM	PO/BOM	M	R			
	6.11	MATERIAL IDENTIFICATION	S	ASTM	ASTM	MTR	M	W			
	6.12	DIMENSIONAL INSPECTION	S	DRAWING	DRAWING	DRAWING	M	W			
	6.13	VISUAL INSPECTION	S	DRAWING	DRAWING	DRAWING	M	W			
		FINAL INSPECTION									
	6.14	TEST FIT INDIVIDUAL SECTIONS	S	DRAWING	DRAWING	PICTURES	M	R			MATCH MARK
	6.15	DIMENSIONAL INSPECTION	S	DRAWING	DRAWING	REPORT	M	W			PER OSHA
	6.16	VISUAL INSPECTION	S	DRAWING	DRAWING	REPORT	M	W			
	6.17	WELD INSPECTION	S	WPS	ASME IX	ITP SIGN OFF	M	W			
		COATING INSPECTION									
	6.18	SURFACE PREPARATION	S	DRAWING	SSPC	REPORT	H	R			CS ONLY
	6.19	MEK RUB TEST	S	ASTM D4752	ASTM D4752	REPORT	H	H			INORGANIC ZINC PRIMER
	6.20	COATING INSPECTION	S	DRAWING	DFT/MILLAGE	REPORT	H	W			CS ONLY
	6.21	CLEANING/PAINT TOUCH-UP	S	DRAWING	DRAWING	DRAWING	H	H			
7.0		**SHIPPING INSPECTION @ SUBVENDOR**									
	7.1	MARKING/TAGGING	S	PO/BOM	PO/BOM	PICTURES	M	H			
	7.2	PACKING INSPECTION	S	SPECIFICATION	DRAWING	PACKING LIST	M	H			
	7.3	INSPECTION RELEASE	S	PROJECT	PROJECT	RELEASE	M	H			
	7.4	**FINAL DOCUMENTATION REVIEW**	S	SPECIFICATION	SPECIFICATION	MDR	M	H			

General Notes:

1. ZEECO USA WPS LIST: 111, 135A, 135B, 136A, 136B, 190, 203, 501, 900, 901
2. ZEECO USA SUB-CONTRACTS ALL NDE TO GLOBE X-RAY SERVICES
3. ZEECO USA ISO PROCEDURES BEGIN WITH ZQS
4. SUBVENDOR WPS LIST: TO FOLLOW
5. ASME B31.3: 5% OF EACH WELDERS WELD (BUTTWELDS) SHALL BE 100% RADIOGRAPHED.
6. ASME VIII-I, UW-52 SPOT: MINIMUM ONE 6" SPOT EXAMINED FOR EACH 50' OF WELD FOR EACH WELDER.

Revision	Description	Made By	Date
0	Initial Issue	Andrea Dominguez	8/3/2021

Hardcopy

Approved by Bobby Martin

Attachment L

Zeeco Rental Brochure

FLARE SYSTEMS

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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 Effeciency (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.

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BURNERS FLARES THERMAL OXIDIZERS VAPOR CONTROL RENTALS AFTERMARKET

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DO YOU NEED TO SHUTDOWN YOUR FLARE?

ZEECO® Combustion Rentals span the scope and capacity to keep any facility's essential operations online during both planned and emergency flare outages. Our rental flare systems are supported entirely by ZEECO Turnkey Combustion Services and can keep specific processes online or eliminate the need to fully de-inventory plants - shortening turnarounds by days. Go with the industry's largest, most dependable combustion rental fleet. Go Zeeco.

ZEECO COMBUSTION RENTAL CAPABILITIES



100% PLANT CAPACITY

» Keep entire facilities online at design capacity to maintain revenues
» Flare options up to 300-feet-tall and 50-inch-diameter
» Flare capacity: 0 to 3 MM lb/Hr
» Smokeless, steam, air, and unassisted available
» Multiple installation and support options
» Rapid deployment and installation
» Self-contained operation and controls



PARTIAL PLANT OR IDLE RELIEF CAPACITY

» Leave relief gathering systems intact
» Reduce required isolation
» Lower capacity required for plant during reduced / idle operation
» Allows full service of main flare while keeping critical systems online
» Reduce outages by days by eliminating purge-out
» Mobile units ensure rapid deployment and installation



SINGLE PROCESS AREA MAINTENANCE CAPACITY

» Service a single system during maintenance activity
» Installation can be in close proximity to emissions point
» Enclosed flare option shields visible flames from community view
» Mobile units ensure rapid deployment and installation

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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.



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NSF REGISTERED ISO 9001: 2015

UB20 Rev 1

XTO Bulldog (15 Mmcfd)

Analysis

Meter ID:	56014539	Lease Name:	XTO BULLDOG CDP
Effective Date:	05/01/2025	Producer:	
Line Pressure:	1205	Line Flow Rate:	0
Line Temperature:	112	Analysis Type:	
Analysis Use:	Accounting	Analysis Pressure Base:	14.73
Analysis Date:	05/31/2025	Analyzed By:	
Sampled By:		Sample Taken Date:	05/31/2025
Sample Type:	ONLI	Cylinder Number:	

Composition

	Mol %	GPM
Carbon Dioxide:	0.216	
Nitrogen:	2.9955	
Methane:	74.4721	
Ethane:	12.2777	3.5863
Propane:	6.1282	2.36
Isobutane:	0.7244	0.326
Normal Butane:	1.8107	0.763
Isopentane:	0.3937	0.156
Normal Pentane:	0.4475	0.1468
Hexanes:	0.5342	0.0846
Neo Pentane:	0	
Heptanes:	0	0
Octanes:	0	0
Nonane:	0	0
Decane:	0	0
Argon:	0	
Carbon Monoxide:	0	
Hydrogen:	0	
Oxygen:	0	
Helium:	0	
Water:	0	
Hydrogen Sulphide:	0	

Hide all optional composition fields

Total:	100	7.4227

Hide all composition fields

Sample Condition

Condition	Real BTU/SCF	Ideal BTU/SCF	Relative Density	Compressib
Water Saturated:	1252.882	0	0	
Dry:	1275.068	0	0.7571	
As Delivered:	1000	0	0	

Water Content (lb/mmscfd):

0

Silver Palace (15 MMcfd)

Analysis

Meter ID:	56014878	Lease Name:	SILVER PALACE HP DELIVERY
Effective Date:	05/01/2025	Producer:	
Line Pressure:	1200	Line Flow Rate:	0
Line Temperature:	88	Analysis Type:	
Analysis Use:	Accounting	Analysis Pressure Base:	14.73
Analysis Date:	05/22/2025	Analyzed By:	
Sampled By:		Sample Taken Date:	05/22/2025
Sample Type:	SPOT	Cylinder Number:	

Composition

	Mol %	GPM
Carbon Dioxide:	1.4869	
Nitrogen:	2.9742	
Methane:	72.5578	
Ethane:	12.5443	3.3668
Propane:	6.5536	1.812
Isobutane:	0.7332	0.241
Normal Butane:	1.913	0.605
Isopentane:	0.3943	0.145
Normal Pentane:	0.443	0.1611
Hexanes:	0.2398	0.099
Neo Pentane:	0	
Heptanes:	0.1199	0.0555
Octanes:	0.04	0.0206
Nonane:	0	0
Decane:	0	0
Argon:	0	
Carbon Monoxide:	0	
Hydrogen:	0	
Oxygen:	0	
Helium:	0	
Water:	0	
Hydrogen Sulphide:	0	

Hide all optional composition fields

Total:	100	6.506

Hide all composition fields

Sample Condition

Condition	Real BTU/SCF	Ideal BTU/SCF	Relative Density	Compr
Water Saturated:	1245.705	0	0	
Dry:	1267.769	0	0.7727	
As Delivered:	0	0	0	

Water Content (lb/mmscfd):

Riley Permian (20 Mmcfd)

Nitrogen	1.57%
CO2	1.89%
H2S	1.30%
Methane	69.44%
Ethane	14.26%
Propane	6.73%
Isobutane	0.84%
N-butane	1.94%
Isopentane	0.51%
N-pentane	0.52%
C6+	1.00%

MOC Lobo (15 MMcfd)

Analysis

Meter ID:	56014929	Lease Name:	MOC LOBO CRP RUN 2
Effective Date:	05/01/2025	Producer:	
Line Pressure:	120	Line Flow Rate:	0
Line Temperature:	79	Analysis Type:	
Analysis Use:	Accounting	Analysis Pressure Base:	14.73
Analysis Date:	05/06/2025	Analyzed By:	
Sampled By:		Sample Taken Date:	05/06/2025
Sample Type:	SPOT	Cylinder Number:	

Composition

	Mol %	GPM
Carbon Dioxide:	3.0981	
Nitrogen:	1.7395	
Methane:	61.4028	
Ethane:	15.7105	4.223
Propane:	10.7156	2.967
Isobutane:	1.3936	0.458
Normal Butane:	3.5802	1.135
Isopentane:	0.7359	0.271
Normal Pentane:	0.8219	0.2995
Hexanes:	0.4811	0.1989
Neo Pentane:	0	
Heptanes:	0.2406	0.1116
Octanes:	0.0802	0.0413
Nonane:	0	0
Decane:	0	0
Argon:	0	
Carbon Monoxide:	0	
Hydrogen:	0	
Oxygen:	0	
Helium:	0	
Water:	0	
Hydrogen Sulphide:	0	

Hide all optional composition fields

Total:	100	9.7053

Hide all composition fields

Sample Condition

Condition	Real BTU/SCF	Ideal BTU/SCF	Relative Density	Com
Water Saturated:	1419.325	0	0	
Dry:	1444.464	0	0.8991	
As Delivered:	0	0	0	

PR Moran (15 MMcfd)

Analysis

Meter ID:	56014952	Lease Name:	MORAN 9 FEDERAL CRP
Effective Date:	05/01/2025	Producer:	
Line Pressure:	158	Line Flow Rate:	0
Line Temperature:	124	Analysis Type:	
Analysis Use:	Accounting	Analysis Pressure Base:	14.73
Analysis Date:	06/03/2025	Analyzed By:	
Sampled By:		Sample Taken Date:	06/03/2025
Sample Type:	SPOT	Cylinder Number:	

Composition

	Mol %	GPM
Carbon Dioxide:	0.1717	
Nitrogen:	1.7348	
Methane:	70.241	
Ethane:	14.586	3.9172
Propane:	7.8158	2.162
Isobutane:	0.9213	0.303
Normal Butane:	2.4843	0.787
Isopentane:	0.538	0.198
Normal Pentane:	0.6659	0.2424
Hexanes:	0.5047	0.2084
Neo Pentane:	0	
Heptanes:	0.2524	0.1169
Octanes:	0.0841	0.0433
Nonane:	0	0
Decane:	0	0
Argon:	0	
Carbon Monoxide:	0	
Hydrogen:	0	
Oxygen:	0	
Helium:	0	
Water:	0	
Hydrogen Sulphide:	0	

Hide all optional composition fields

Total:	100	7.9782

Hide all composition fields

Sample Condition

Condition	Real BTU/SCF	Ideal BTU/SCF	Relative Density	Com
Water Saturated:	1351.917	0	0	
Dry:	1375.863	0	0.8075	
As Delivered:	0	0	0	

PR Delorian CTB (50 MMcfd)

Analysis

Meter ID:	56014985	Lease Name:	DELOREAN CRP
Effective Date:	03/01/2025	Producer:	
Line Pressure:	104	Line Flow Rate:	0
Line Temperature:	92	Analysis Type:	
Analysis Use:	Accounting	Analysis Pressure Base:	14.73
Analysis Date:	04/01/2025	Analyzed By:	
Sampled By:		Sample Taken Date:	04/01/2025
Sample Type:	SPOT	Cylinder Number:	

Composition

	Mol %	GPM
Carbon Dioxide:	0.5377	
Nitrogen:	3.5933	
Methane:	66.562	
Ethane:	14.0137	3.7646
Propane:	8.7536	2.422
Isobutane:	1.1386	0.374
Normal Butane:	2.8415	0.9
Isopentane:	0.752	0.276
Normal Pentane:	0.7838	0.2854
Hexanes:	0.6143	0.2537
Neo Pentane:	0	
Heptanes:	0.3071	0.1423
Octanes:	0.1024	0.0527
Nonane:	0	0
Decane:	0	0
Argon:	0	
Carbon Monoxide:	0	
Hydrogen:	0	
Oxygen:	0	
Helium:	0	
Water:	0	
Hydrogen Sulphide:	0	

Hide all optional composition fields

Total:	100	8.4707

Hide all composition fields

Sample Condition

Condition	Real BTU/SCF	Ideal BTU/SCF	Relative Density	Compressibility (Z)
Water Saturated:	1369.784	0	0	0
Dry:	1394.046	0	0.8451	0
As Delivered:	0	0	0	0

Water Content (lb/mmscfd):

Red Hills North Inlet (160 MMcfd)

Analysis

Meter ID:	56099016	Lease Name:	RED HILLS V TREATER INLET
Effective Date:	05/01/2025	Producer:	
Line Pressure:	896	Line Flow Rate:	0
Line Temperature:	83	Analysis Type:	
Analysis Use:	Accounting	Analysis Pressure Base:	14.73
Analysis Date:	05/31/2025	Analyzed By:	
Sampled By:		Sample Taken Date:	05/31/2025
Sample Type:	ONLI	Cylinder Number:	

Composition

	Mol %	GPM
Carbon Dioxide:	3.5894	
Nitrogen:	1.8187	
Methane:	73.3178	
Ethane:	11.6842	3.1358
Propane:	5.9222	1.637
Isobutane:	0.7567	0.249
Normal Butane:	1.7686	0.56
Isopentane:	0.389	0.143
Normal Pentane:	0.4298	0.1563
Hexanes:	0	0
Neo Pentane:	0	
Heptanes:	0	0
Octanes:	0	0
Nonane:	0.3236	0.1827
Decane:	0	0
Argon:	0	
Carbon Monoxide:	0	
Hydrogen:	0	
Oxygen:	0	
Helium:	0	
Water:	0	
Hydrogen Sulphide:	0	

Hide all optional composition fields

Total:	100	6.0638

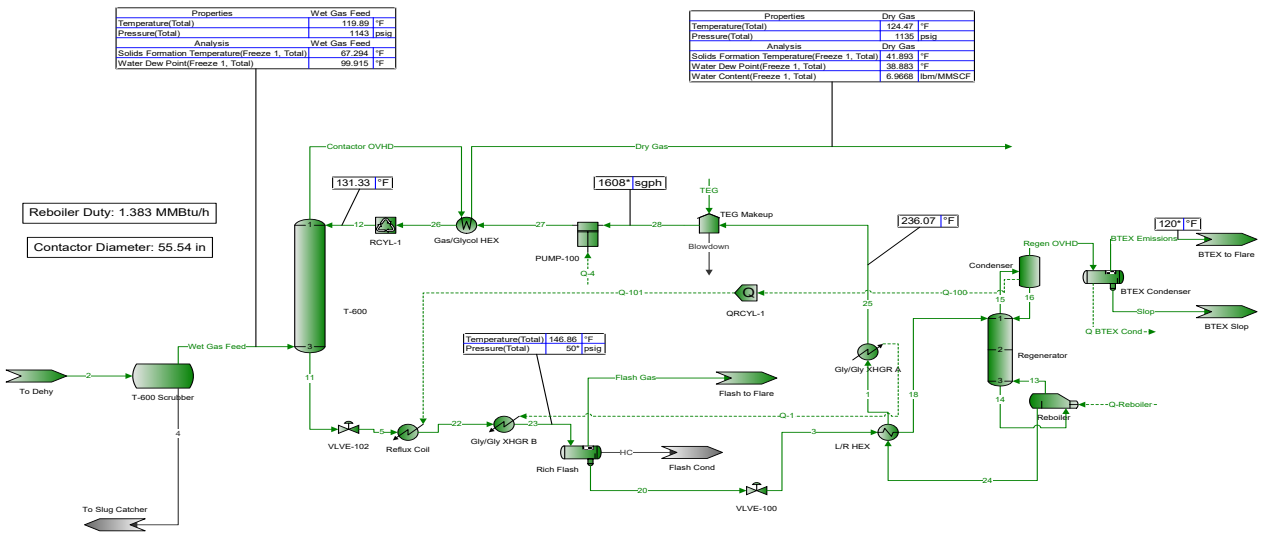
Hide all composition fields

Sample Condition

Condition	Real BTU/SCF	Ideal BTU/SCF	Relative Density	Compressibilit
Water Saturated:	1213.96	0	0	
Dry:	1235.457	0	0.7738	
As Delivered:	0	0	0	

Volume Source	XTO Bulldog	Silver Palace	Riley Permian	MOC Lobo	PR Moran	PR Delorian	RH N Inlet	CH Plant Inlet Blend
Volume (Mcfd)	25,000	25,000	30,000	25,000	25,000	60,000	160,000	350,000
Component	Mole %	Mole %	Mole %	Mole %	Mole %	Mole %	Mole %	Mole %
H2S	0.82%	0.98%	1.28%	1.46%	0.85%	1.89%	0.05%	0.75%
CO2	2.40%	2.82%	3.60%	4.01%	4.41%	5.95%	5.89%	5.00%
N2	2.91%	2.90%	1.54%	1.70%	1.67%	3.33%	1.77%	2.17%
C1	72.20%	70.85%	68.20%	59.87%	66.64%	61.66%	71.50%	68.36%
C2	11.90%	12.24%	14.01%	15.32%	13.84%	12.98%	11.39%	12.44%
C3	5.95%	6.40%	6.61%	10.45%	7.42%	8.11%	5.77%	6.75%
I-C4	0.69%	0.71%	0.82%	1.36%	0.86%	1.06%	0.74%	0.85%
N-C4	1.75%	1.86%	1.91%	3.49%	2.35%	2.63%	1.73%	2.08%
I-C5	0.38%	0.38%	0.50%	0.72%	0.51%	0.69%	0.38%	0.48%
N-C5	0.44%	0.43%	0.51%	0.80%	0.64%	0.72%	0.42%	0.52%
C6	0.52%	0.23%	0.98%	0.47%	0.47%	0.57%	0.00%	0.30%
C7	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
C8	0.00%	0.12%	0.00%	0.23%	0.21%	0.29%	0.00%	0.09%
C9	0.00%	0.04%	0.00%	0.08%	0.08%	0.09%	0.31%	0.17%
C10	0.00%	0.00%	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%	0.00%	0.00%
Benzene	9.78E-05	9.76E-05	9.82E-05	9.75E-05	9.49E-05	9.26E-05	9.75E-05	0.00966%
Toluene	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00000%
Ethylbenzene	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00000%
m-Xylene	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00000%
Water	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.02898%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Glycol Dehydration Unit



Process Streams	Blowdown	BTEX Emissions	Contactor OVHD	Dry Gas	Flash Gas	HC	Regen OVHD	Slop
Composition — Status:	Solved	Solved	Solved	Solved	Solved		Solved	Solved
Phase: Total — From Block:	TEG Makeup	BTEX Condenser	T-600	Gas/Glycol HEX	Rich Flash	Rich Flash	Condenser	BTEX Condenser
To Block:	--	BTEX to Flare	Gas/Glycol HEX	--	Flash to Flare	Flash Cond	BTEX Condenser	BTEX Slop
Mole Fraction	%	%	%	%	%		%	%
H2S	1.28126E-07	2.46249	0.0419709	0.0419709	0.380723		0.225274	0.00460828
Nitrogen	5.63498E-16	0.0151666	1.82936	1.82936	0.369129		0.00136204	4.38575E-07
Methane	9.66033E-12	7.46586	73.9777	73.9777	47.8689		0.670899	0.000684374
CO2	4.82758E-09	14.2958	2.35719	2.35719	10.2811		1.29091	0.00817562
Ethane	3.00472E-10	9.27883	11.5787	11.5787	17.4527		0.836676	0.00399201
Propane	2.58843E-09	12.6228	6.24666	6.24666	12.5655		1.14725	0.0153722
i-Butane	1.18397E-09	2.22590	0.823758	0.823758	1.65507		0.204782	0.00543158
n-Butane	1.39881E-08	9.68226	1.93296	1.93296	4.96056		0.902549	0.0365708
i-Pentane	1.71707E-08	3.00247	0.416972	0.416972	1.03697		0.296319	0.0293997
n-Pentane	3.52922E-08	3.81091	0.405997	0.405997	1.13518		0.386093	0.0482889
Neohexane	2.01025E-09	0.0314239	0.00289042	0.00289042	0.00763859		0.00334449	0.000574906
Cyclopentane	1.26480E-06	2.05804	0.0318885	0.0318885	0.165475		0.227683	0.0471466
2-Methylpentane	1.10110E-07	0.835214	0.0624297	0.0624297	0.169892		0.0944464	0.0213815
3-Methylpentane	1.37438E-07	0.588155	0.0342845	0.0342845	0.100595		0.0683840	0.0171169
n-Hexane	2.25279E-07	1.00624	0.0656024	0.0656024	0.177714		0.121837	0.0346046
Methylcyclopentane	1.80640E-06	2.06265	0.0340253	0.0340253	0.151150		0.258563	0.0806185
Benzene	0.000593921	9.75120	0.0236709	0.0236709	0.155517		1.45118	0.632516
Cyclohexane	4.79844E-06	2.37715	0.0420032	0.0420032	0.170836		0.331515	0.129745
2-Methylhexane	1.64307E-08	0.103869	0.00679839	0.00679839	0.0180214		0.0158895	0.00721177
3-Methylhexane	4.66404E-08	0.185874	0.00998664	0.00998664	0.0282861		0.0299932	0.0146180
1,1-Dimethylcyclopentane	1.34387E-06	0.722933	0.0132576	0.0132576	0.0513279		0.114899	0.0549262
n-Heptane	5.52081E-08	0.146189	0.00864409	0.00864409	0.0228485		0.0264914	0.0146852
Methylcyclohexane	3.17184E-06	0.783301	0.0186149	0.0186149	0.0624408		0.147755	0.0850681
1,1,2-Trimethylcyclopentane	1.63206E-07	0.0196177	0.000808600	0.000808600	0.00214519		0.00482449	0.00336538
Toluene	0.00173022	3.64022	0.0101556	0.0101556	0.0554414		0.944514	0.678626
2-Methylheptane	4.18508E-08	0.0398465	0.00295890	0.00295890	0.00711882		0.0108400	0.00797897
3-Methylheptane	9.70480E-09	0.00591494	0.000414981	0.000414981	0.000981761		0.00170408	0.00128874
1,1-Dimethylcyclohexane	3.33947E-07	0.0362115	0.00187205	0.00187205	0.00452820		0.0107770	0.00826825
n-Octane	4.21064E-08	0.0168995	0.00133689	0.00133689	0.00302257		0.00587930	0.00479233
Ethylbenzene	0.000225744	0.0547702	0.000316266	0.000316266	0.00126205		0.0348753	0.0329130
m-Xylene	0.000317507	0.0759388	0.000404159	0.000404159	0.00162160		0.0461055	0.0431630
p-Xylene	0.000278944	0.0757815	0.000420635	0.000420635	0.00169644		0.0452711	0.0422617
o-Xylene	0.000380714	0.0471989	0.000181076	0.000181076	0.000746128		0.0279184	0.0260166
n-Nonane	1.40304E-07	0.00786176	0.000888712	0.000888712	0.00161874		0.00551540	0.00528397
n-Decane	1.01649E-07	0.000557135	0.000109105	0.000109105	0.000156289		0.000923754	0.000959915
TEG	89.1370	7.44150E-09	0.000174874	0.000174874	0.000557341		0.00112234	0.00123304
Water	10.8595	10.4645	0.0146732	0.0146732	0.931560		90.0056	97.8511
Methanol	0	0	0	0	0		0	0
Molar Flow	lbmol/h	lbmol/h	lbmol/h	lbmol/h	lbmol/h	lbmol/h	lbmol/h	lbmol/h
H2S	0	0.0443209	8.08389	8.08389	0.0259644	0	0.0451618	0.000840901
Nitrogen	0	0.000272974	352.347	352.347	0.0251737	0	0.000273054	8.00295E-08
Methane	0	0.134373	14248.6	14248.6	3.26455	0	0.134498	0.000124882
CO2	0	0.257302	454.011	454.011	0.701149	0	0.258794	0.00149186
Ethane	0	0.167004	2230.13	2230.13	1.19023	0	0.167732	0.000728447
Propane	0	0.227189	1203.15	1203.15	0.856939	0	0.229994	0.00280505
i-Butane	0	0.0400625	158.661	158.661	0.112872	0	0.0410537	0.000991135
n-Butane	0	0.174265	372.300	372.300	0.338299	0	0.180938	0.00667330
i-Pentane	0	0.0540396	80.3116	80.3116	0.0707192	0	0.0594043	0.00536475
n-Pentane	0	0.0685902	78.1977	78.1977	0.0774163	0	0.0774018	0.00881158
Neohexane	0	0.000565578	0.556713	0.556713	0.000520934	0	0.000670485	0.000104907
Cyclopentane	0	0.0370414	6.14194	6.14194	0.0112850	0	0.0456446	0.00860313
2-Methylpentane	0	0.0150325	12.0244	12.0244	0.0115862	0	0.0189341	0.00390161
3-Methylpentane	0	0.0105858	6.60342	6.60342	0.00686035	0	0.0137093	0.00312342
n-Hexane	0	0.0181107	12.6355	12.6355	0.0121197	0	0.0244252	0.00631452
Methylcyclopentane	0	0.0371243	6.55350	6.55350	0.0103081	0	0.0518353	0.0147110
Benzene	0	0.175506	4.55917	4.55917	0.0106059	0	0.290925	0.115419
Cyclohexane	0	0.0427849	8.09010	8.09010	0.0116506	0	0.0664603	0.0236754
2-Methylhexane	0	0.00186947	1.30941	1.30941	0.00122901	0	0.00318545	0.00131598
3-Methylhexane	0	0.00334543	1.92349	1.92349	0.00192904	0	0.00601287	0.00266744
1,1-Dimethylcyclopentane	0	0.0130116	2.55350	2.55350	0.00350044	0	0.0230343	0.0100227
n-Heptane	0	0.00263116	1.66491	1.66491	0.00155822	0	0.00531085	0.00267969
Methylcyclohexane	0	0.0140981	3.58535	3.58535	0.00425832	0	0.0296210	0.0155229
1,1,2-Trimethylcyclopentane	0	0.000353086	0.155742	0.155742	0.000146297	0	0.000967187	0.000614102
Toluene	0	0.0655180	1.95604	1.95604	0.00378098	0	0.189351	0.123833
2-Methylheptane	0	0.000717173	0.569905	0.569905	0.000485487	0	0.00217315	0.00145597
3-Methylheptane	0	0.000106459	0.0799281	0.0799281	6.69538E-05	0	0.000341624	0.000235165
1,1-Dimethylcyclohexane	0	0.000651749	0.360570	0.360570	0.000308813	0	0.00216051	0.00150876
n-Octane	0	0.000304164	0.257494	0.257494	0.000206132	0	0.00117865	0.000874486
Ethylbenzene	0	0.000985775	0.0609149	0.0609149	8.60692E-05	0	0.00699162	0.00600585
m-Xylene	0	0.00136677	0.0778436	0.0778436	0.000110590	0	0.00924299	0.00787621
p-Xylene	0	0.00136394	0.0810171	0.0810171	0.000115693	0	0.00907570	0.00771176
o-Xylene	0	0.000849503	0.0348764	0.0348764	5.08842E-05	0	0.00559692	0.00474742
n-Nonane	0	0.000141499	0.171172	0.171172	0.000110394	0	0.00110570	0.000964200
n-Decane	0	1.00275E-05	0.0210143	0.0210143	1.06585E-05	0	0.000185189	0.000175162
TEG	0	1.33935E-10	0.0336819	0.0336819	3.80093E-05	0	0.000225001	0.000225001
Water	0	0.188343	2.82615	2.82615	0.0635302	0	18.0438	17.8555
Methanol	0	0	0	0	0	0	0	0
Mass Fraction	%	%	%	%	%		%	%
H2S	3.21505E-08	1.64515	0.0644576	0.0644576	0.432968		0.344098	0.00806182
Nitrogen	1.16224E-16	0.00832864	2.30929	2.30929	0.345048		0.00171007	6.30657E-07
Methane	1.14104E-12	2.34785	53.4793	53.4793	25.6248		0.482378	0.000563571
CO2	1.56428E-09	12.3332	4.67472	4.67472	15.0981		2.54625	0.0184693
Ethane	6.65215E-11	5.46932	15.6889	15.6889	17.5113		1.12755	0.00616162
Propane	8.40371E-10	10.9111	12.4125	12.4125	18.4889		2.26732	0.0347948
i-Butane	5.06666E-10	2.53611	2.15753	2.15753	3.20991		0.533451	0.0162051
n-Butane	5.98602E-09	11.0316	5.06266	5.06266	9.62075		2.35111	0.109109
i-Pentane	9.12129E-09	4.24647	1.35566	1.35566	2.49651		0.958181	0.108882
n-Pentane	1.87476E-08	5.38987	1.31998	1.31998	2.73293		1.24848	0.178838
Neohexane	1.27547E-09	0.0530840	0.0112243	0.0112243	0.0219651		0.0129173	0.00254310
Cyclopentane	6.53105E-07	2.82942	0.100779	0.100779	0.387248		0.715667	0.169729
2-Methylpentane	6.98631E-08	1.41092	0.242431	0.242431	0.488530		0.364777	0.0945810
3-Methylpentane	8.72025E-08	0.993563	0.133136	0.133136	0.289265		0.264118	0.0757167
n-Hexane	1.42936E-07	1.69983	0.254752	0.254752	0.511024		0.470568	0.153074
Methylcyclopentane	1.11932E-06	3.40290	0.129038	0.129038	0.424469		0.975279	0.348274
Benzene	0.000341573	14.9312	0.0833193	0.0833193	0.405351		5.08040	2.53614
Cyclohexane	2.97332E-06	3.92176	0.159294	0.159294	0.479755		1.25045	0.560502
2-Methylhexane	1.21219E-08	0.204025	0.0306970	0.0306970	0.0602559		0.0713587	0.0370938
3-Methylhexane	3.44093E-08	0.365103	0.0450931	0.0450931	0.0945768		0.134697	0.0751879
1,1-Dimethylcyclopentane	9.71503E-07	1.39145	0.0586582	0.0586582	0.168166		0.505622	0.276830
n-Heptane	4.07302E-08	0.287151	0.0390310	0.0390310	0.0763960		0.118971	0.0755334
Methylcyclohexane	2.29297E-06	1.50764	0.0823615	0.0823615	0.204576		0.650205	0.428746
1,1,2-Trimethylcyclopentane	1.34840E-07	0.0431528	0.00408874	0.00408874	0.00803237		0.0242635	0.0193847
Toluene	0.00117376	6.57489	0.0421658	0.0421658	0.170456		3.90040	3.20963
2-Methylheptane	3.51979E-08	0.0892248	0.0152307	0.0152307	0.0271343		0.0554963	0.0467848
3-Methylheptane	8.16206E-09	0.0132448	0.00213608	0.00213608	0.00374211		0.00872415	0.00755656
1,1-Dimethylcyclohexane	2.75904E-07	0.0796543	0.00946616	0.00946616	0.0169552		0.0541998	0.0476255
n-Octane	3.54128E-08	0.0378416	0.00688154	0.00688154	0.0115209		0.0300995	0.0280999
Ethylbenzene	0.000176455	0.113985	0.00151303	0.00151303	0.00447091		0.165943	0.179363
m-Xylene	0.000248183	0.158039	0.00193351	0.00193351	0.00574463		0.219378	0.235221
p-Xylene	0.000218040	0.157712	0.00201234	0.00201234	0.00600975		0.215408	0.230310
o-Xylene	0.000297590	0.0982276	0.000866277	0.000866277	0.00264321		0.132841	0.141780
n-Nonane	1.32490E-07	0.0197658	0.00513630	0.00513630	0.00692768		0.0317038	0.0347872
n-Decane	1.06485E-07	0.00155392	0.000699530	0.000699530	0.000742016		0.00589067	0.00701077
TEG	98.5571	2.19065E-08	0.00118340	0.00118340	0.00279286		0.00755400	0.00950504
Water	1.44042	3.69554	0.0119119	0.0119119	0.560000		72.6725	90.4879
Methanol	0	0	0	0	0		0	0
Mass Flow	lb/h	lb/h	lb/h	lb/h	lb/h	lb/h	lb/h	lb/h
H2S	0	1.51050	275.506	275.506	0.884890	0	1.53915	0.0286586
Nitrogen	0	0.00764692	9870.43	9870.43	0.705201	0	0.00764916	2.24190E-06
Methane	0	2.15568	228582	228582	52.3713	0	2.15768	0.00200342
CO2	0	11.3237	19980.8	19980.8	30.8572	0	11.3894	0.0656558
Ethane	0	5.02164	67057.8	67057.8	35.7891	0	5.04355	0.0219037
Propane	0	10.0180	53053.6	53053.6	37.7873	0	10.1417	0.123691
i-Butane	0	2.32852	9221.75	9221.75	6.56035	0	2.38613	0.0576070
n-Butane	0	10.1287	21638.9	21638.9	19.6627	0	10.5165	0.387867
i-Pentane	0	3.89889	5794.39	5794.39	5.10230	0	4.28595	0.387060
n-Pentane	0	4.94870	5641.87	5641.87	5.58550	0	5.58445	0.635745
Neohexane	0	0.0487389	47.9750	47.9750	0.0448917	0	0.0577793	0.00904037
Cyclopentane	0	2.59782	430.752	430.752	0.791448	0	3.20119	0.603362
2-Methylpentane	0	1.29543	1036.20	1036.20	0.998446	0	1.63165	0.336222
3-Methylpentane	0	0.912238	569.052	569.052	0.591193	0	1.18140	0.269162
n-Hexane	0	1.56070	1088.86	1088.86	1.04442	0	2.10485	0.544156
Methylcyclopentane	0	3.12437	551.539	551.539	0.867520	0	4.36243	1.23807
Benzene	0	13.7091	356.125	356.125	0.828447	0	22.7247	9.01561
Cyclohexane	0	3.60076	680.859	680.859	0.980512	0	5.59326	1.99251
2-Methylhexane	0	0.187325	131.206	131.206	0.123150	0	0.319188	0.131863
3-Methylhexane	0	0.335218	192.738	192.738	0.193294	0	0.602501	0.267282
1,1-Dimethylcyclopentane	0	1.27756	250.718	250.718	0.343694	0	2.26165	0.984092
n-Heptane	0	0.263647	166.827	166.827	0.156136	0	0.532157	0.268511
Methylcyclohexane	0	1.38424	352.031	352.031	0.418108	0	2.90837	1.52413
1,1,2-Trimethylcyclopentane	0	0.0396207	17.4762	17.4762	0.0164164	0	0.108531	0.0689100
Toluene	0	6.03672	180.226	180.226	0.348373	0	17.4465	11.4098
2-Methylheptane	0	0.0819216	65.0994	65.0994	0.0554565	0	0.248235	0.166314
3-Methylheptane	0	0.0121607	9.13006	9.13006	0.00764804	0	0.0390232	0.0268625
1,1-Dimethylcyclohexane	0	0.0731345	40.4605	40.4605	0.0346527	0	0.242436	0.169302
n-Octane	0	0.0347442	29.4132	29.4132	0.0235462	0	0.134635	0.0998913
Ethylbenzene	0	0.104655	6.46703	6.46703	0.00913753	0	0.742265	0.637611
m-Xylene	0	0.145104	8.26427	8.26427	0.0117407	0	0.981282	0.836178
p-Xylene	0	0.144803	8.60118	8.60118	0.0122826	0	0.963522	0.818719
o-Xylene	0	0.0901875	3.70266	3.70266	0.00540212	0	0.594197	0.504010
n-Nonane	0	0.0181479	21.9537	21.9537	0.0141586	0	0.141811	0.123664
n-Decane	0	0.00142673	2.98995	2.98995	0.00151651	0	0.0263490	0.0249223
TEG	0	2.01134E-08	5.05810	5.05810	0.00570797	0	0.0337891	0.0337891
Water	0	3.39305	50.9139	50.9139	1.14452	0	325.065	321.672
Methanol	0	0	0	0	0	0	0	0

Process Streams	TEG	Wet Gas Feed	1	2	3	4	5	11	12
Composition — Status:	Solved	Solved	Solved	Solved	Solved		Solved	Solved	Solved
Phase: Total — From Block:	--	T-600 Scrubber	L/R HEX	To Dehy	VLVE-100	T-600 Scrubber	VLVE-102	T-600	RCYL-1
To Block:	TEG Makeup	T-600	Gly/Gly XHGR A	T-600 Scrubber	L/R HEX	To Slug Catcher	Reflux Coil	VLVE-102	T-600
Mole Fraction	%	%	%	%	%		%	%	%
H2S	0	0.0422813	1.28126E-07	0.0422813	0.0343963		0.0514966	0.0514966	1.36655E-07
Nitrogen	0	1.82695	5.63498E-16	1.82695	0.000207964		0.0184239	0.0184239	0
Methane	0	73.8924	9.66033E-12	73.8924	0.102437		2.46096	2.46096	0
CO2	0	2.35889	4.82758E-09	2.35889	0.197103		0.695014	0.695014	0
Ethane	0	11.5696	3.00472E-10	11.5696	0.127749		0.983187	0.983187	0
Propane	0	6.24361	2.58843E-09	6.24361	0.175169		0.786957	0.786957	0
i-Butane	0	0.823410	1.18397E-09	0.823410	0.0312674		0.111444	0.111444	0
n-Butane	0	1.93296	1.39881E-08	1.93296	0.137807		0.375936	0.375936	0
i-Pentane	0	0.417067	1.71707E-08	0.417067	0.0452437		0.0942116	0.0942116	1.82544E-08
n-Pentane	0	0.406235	3.52922E-08	0.406235	0.0589510		0.112091	0.112091	3.75594E-08
Neohexane	0	0.00289257	2.01025E-09	0.00289257	0.000510658		0.000862609	0.000862609	0
Cyclopentane	0	0.0321393	1.26480E-06	0.0321393	0.0347650		0.0412189	0.0412189	1.37076E-06
2-Methylpentane	0	0.0625011	1.10110E-07	0.0625011	0.0144207		0.0220973	0.0220973	1.19340E-07
3-Methylpentane	0	0.0343434	1.37438E-07	0.0343434	0.0104414		0.0148928	0.0148928	1.48829E-07
n-Hexane	0	0.0657006	2.25279E-07	0.0657006	0.0186030		0.0264593	0.0264593	2.44507E-07
Methylcyclopentane	0	0.0343001	1.80640E-06	0.0343001	0.0394805		0.0449943	0.0449943	1.95774E-06
Benzene	0	0.0252010	0.000593921	0.0252010	0.222078		0.218792	0.218792	0.000643554
Cyclohexane	0	0.0423498	4.79844E-06	0.0423498	0.0506217		0.0565574	0.0565574	5.21168E-06
2-Methylhexane	0	0.00681182	1.64307E-08	0.00681182	0.00242612		0.00319616	0.00319616	1.76831E-08
3-Methylhexane	0	0.0100139	4.66404E-08	0.0100139	0.00457957		0.00575011	0.00575011	5.03074E-08
1,1-Dimethylcyclopentane	0	0.0133767	1.34387E-06	0.0133767	0.0175446		0.0192127	0.0192127	1.46149E-06
n-Heptane	0	0.00866768	5.52081E-08	0.00866768	0.00404491		0.00497336	0.00497336	5.95780E-08
Methylcyclohexane	0	0.0187646	3.17184E-06	0.0187646	0.0225627		0.0245318	0.0245318	3.44995E-06
1,1,2-Trimethylcyclopentane	0	0.000813248	1.63206E-07	0.000813248	0.000736770		0.000806312	0.000806312	1.78544E-07
Toluene	0	0.0111420	0.00173022	0.0111420	0.145680		0.141224	0.141224	0.00187054
2-Methylheptane	0	0.00296857	4.18508E-08	0.00296857	0.00165515		0.00192493	0.00192493	4.52414E-08
3-Methylheptane	0	0.000416522	9.70480E-09	0.000416522	0.000260197		0.000295825	0.000295825	0
1,1-Dimethylcyclohexane	0	0.00188225	3.33947E-07	0.00188225	0.00164577		0.00178810	0.00178810	3.64602E-07
n-Octane	0	0.00134221	4.21064E-08	0.00134221	0.000897722		0.00100264	0.00100264	4.56746E-08
Ethylbenzene	0	0.000352422	0.000225744	0.000352422	0.00551625		0.00530619	0.00530619	0.000242916
m-Xylene	0	0.000451953	0.000317507	0.000451953	0.00730869		0.00702789	0.00702789	0.000341462
p-Xylene	0	0.000467581	0.000278944	0.000467581	0.00714861		0.00687940	0.00687940	0.000300165
o-Xylene	0	0.000209954	0.000380714	0.000209954	0.00458533		0.00439576	0.00439576	0.000407022
n-Nonane	0	0.000893781	1.40304E-07	0.000893781	0.000842243		0.000880584	0.000880584	1.53263E-07
n-Decane	0	0.000109968	1.01649E-07	0.000109968	0.000141130		0.000141879	0.000141879	1.11530E-07
TEG	99.9	0	89.1370	0	75.5272		71.7980	71.7980	89.1373
Water	0.1	0.108516	10.8595	0.108516	22.9440		21.8571	21.8571	10.8589
Methanol	0	0	0	0	0		0	0	0
Molar Flow	lbmol/h	lbmol/h	lbmol/h	lbmol/h	lbmol/h	lbmol/h	lbmol/h	lbmol/h	lbmol/h
H2S	0	8.15501	1.42542E-07	8.15501	0.0451619	0	0.0711263	0.0711263	1.52081E-07
Nitrogen	0	352.372	6.26899E-16	352.372	0.000273054	0	0.0254468	0.0254468	0
Methane	0	14252.0	1.07472E-11	14252.0	0.134498	0	3.39904	3.39904	0
CO2	0	454.971	5.37074E-09	454.971	0.258794	0	0.959943	0.959943	0
Ethane	0	2231.48	3.34279E-10	2231.48	0.167732	0	1.35796	1.35796	0
Propane	0	1204.24	2.87966E-09	1204.24	0.229994	0	1.08693	1.08693	0
i-Butane	0	158.815	1.31718E-09	158.815	0.0410537	0	0.153925	0.153925	0
n-Butane	0	372.820	1.55619E-08	372.820	0.180938	0	0.519237	0.519237	0
i-Pentane	0	80.4417	1.91026E-08	80.4417	0.0594044	0	0.130124	0.130124	2.03151E-08
n-Pentane	0	78.3525	3.92630E-08	78.3525	0.0774019	0	0.154818	0.154818	4.17994E-08
Neohexane	0	0.557905	2.23643E-09	0.557905	0.000670487	0	0.00119142	0.00119142	0
Cyclopentane	0	6.19887	1.40711E-06	6.19887	0.0456460	0	0.0569310	0.0569310	1.52551E-06
2-Methylpentane	0	12.0549	1.22499E-07	12.0549	0.0189342	0	0.0305204	0.0305204	1.32812E-07
3-Methylpentane	0	6.62399	1.52902E-07	6.62399	0.0137094	0	0.0205698	0.0205698	1.65631E-07
n-Hexane	0	12.6720	2.50626E-07	12.6720	0.0244255	0	0.0365452	0.0365452	2.72109E-07
Methylcyclopentane	0	6.61564	2.00964E-06	6.61564	0.0518373	0	0.0621454	0.0621454	2.17875E-06
Benzene	0	4.86065	0.000660745	4.86065	0.291586	0	0.302192	0.302192	0.000716204
Cyclohexane	0	8.16821	5.33832E-06	8.16821	0.0664656	0	0.0781163	0.0781163	5.80002E-06
2-Methylhexane	0	1.31383	1.82793E-08	1.31383	0.00318547	0	0.00441448	0.00441448	1.96793E-08
3-Methylhexane	0	1.93144	5.18880E-08	1.93144	0.00601292	0	0.00794196	0.00794196	5.59866E-08
1,1-Dimethylcyclopentane	0	2.58003	1.49507E-06	2.58003	0.0230358	0	0.0265363	0.0265363	1.62647E-06
n-Heptane	0	1.67178	6.14196E-08	1.67178	0.00531091	0	0.00686913	0.00686913	6.63037E-08
Methylcyclohexane	0	3.61923	3.52871E-06	3.61923	0.0296246	0	0.0338829	0.0338829	3.83941E-06
1,1,2-Trimethylcyclopentane	0	0.156855	1.81569E-07	0.156855	0.000967369	0	0.00111367	0.00111367	1.98700E-07
Toluene	0	2.14901	0.00192489	2.14901	0.191276	0	0.195057	0.195057	0.00208171
2-Methylheptane	0	0.572563	4.65596E-08	0.572563	0.00217319	0	0.00265868	0.00265868	5.03487E-08
3-Methylheptane	0	0.0803367	1.07967E-08	0.0803367	0.000341635	0	0.000408588	0.000408588	0
1,1-Dimethylcyclohexane	0	0.363039	3.71520E-07	0.363039	0.00216088	0	0.00246969	0.00246969	4.05761E-07
n-Octane	0	0.258879	4.68439E-08	0.258879	0.00117870	0	0.00138483	0.00138483	5.08307E-08
Ethylbenzene	0	0.0679734	0.000251142	0.0679734	0.00724276	0	0.00732883	0.00732883	0.000270338
m-Xylene	0	0.0871704	0.000353230	0.0871704	0.00959622	0	0.00970681	0.00970681	0.000380009
p-Xylene	0	0.0901848	0.000310329	0.0901848	0.00938603	0	0.00950173	0.00950173	0.000334050
o-Xylene	0	0.0404948	0.000423549	0.0404948	0.00602047	0	0.00607136	0.00607136	0.000452970
n-Nonane	0	0.172388	1.56090E-07	0.172388	0.00110585	0	0.00121625	0.00121625	1.70565E-07
n-Decane	0	0.0212101	1.13086E-07	0.0212101	0.000185302	0	0.000195961	0.000195961	1.24121E-07
TEG	0.0346570	0	99.1660	0	99.1662	0	99.1662	99.1662	99.1999
Water	3.46917E-05	20.9301	12.0813	20.9301	30.1252	0	30.1887	30.1887	12.0847
Methanol	0	0	0	0	0	0	0	0	0
Mass Fraction	%	%	%	%	%		%	%	%
H2S	0	0.0649265	3.21505E-08	0.0649265	0.00989344		0.0153793	0.0153793	3.42903E-08
Nitrogen	0	2.30597	1.16224E-16	2.30597	4.91675E-05		0.00452266	0.00452266	0
Methane	0	53.4113	1.14104E-12	53.4113	0.0138692		0.345958	0.345958	0
CO2	0	4.67753	1.56428E-09	4.67753	0.0732089		0.268032	0.268032	0
Ethane	0	15.6747	6.65215E-11	15.6747	0.0324190		0.259062	0.259062	0
Propane	0	12.4049	8.40371E-10	12.4049	0.0651892		0.304084	0.304084	0
i-Butane	0	2.15636	5.06666E-10	2.15636	0.0153376		0.0567607	0.0567607	0
n-Butane	0	5.06206	5.98602E-09	5.06206	0.0675984		0.191471	0.191471	0
i-Pentane	0	1.35580	9.12129E-09	1.35580	0.0275493		0.0595636	0.0595636	9.69688E-09
n-Pentane	0	1.32059	1.87476E-08	1.32059	0.0358959		0.0708674	0.0708674	1.99519E-08
Neohexane	0	0.0112313	1.27547E-09	0.0112313	0.000371396		0.000651395	0.000651395	0
Cyclopentane	0	0.101560	6.53105E-07	0.101560	0.0205773		0.0253318	0.0253318	7.07817E-07
2-Methylpentane	0	0.242680	6.98631E-08	0.242680	0.0104880		0.0166867	0.0166867	7.57189E-08
3-Methylpentane	0	0.133349	8.72025E-08	0.133349	0.00759392		0.0112463	0.0112463	9.44296E-08
n-Hexane	0	0.255103	1.42936E-07	0.255103	0.0135298		0.0199806	0.0199806	1.55135E-07
Methylcyclopentane	0	0.130065	1.11932E-06	0.130065	0.0280420		0.0331824	0.0331824	1.21309E-06
Benzene	0	0.0886947	0.000341573	0.0886947	0.146402		0.149760	0.149760	0.000370116
Cyclohexane	0	0.160589	2.97332E-06	0.160589	0.0359554		0.0417100	0.0417100	3.22937E-06
2-Methylhexane	0	0.0307540	1.21219E-08	0.0307540	0.00205170		0.00280641	0.00280641	1.30458E-08
3-Methylhexane	0	0.0452109	3.44093E-08	0.0452109	0.00387280		0.00504893	0.00504893	3.71146E-08
1,1-Dimethylcyclopentane	0	0.0591782	9.71503E-07	0.0591782	0.0145384		0.0165305	0.0165305	1.05653E-06
n-Heptane	0	0.0391329	4.07302E-08	0.0391329	0.00342065		0.00436690	0.00436690	4.39540E-08
Methylcyclohexane	0	0.0830142	2.29297E-06	0.0830142	0.0186967		0.0211070	0.0211070	2.49402E-06
1,1,2-Trimethylcyclopentane	0	0.00411176	1.34840E-07	0.00411176	0.000697747		0.000792853	0.000792853	1.47511E-07
Toluene	0	0.0462558	0.00117376	0.0462558	0.113283		0.114024	0.114024	0.00126895
2-Methylheptane	0	0.0152786	3.51979E-08	0.0152786	0.00159565		0.00192680	0.00192680	3.80494E-08
3-Methylheptane	0	0.00214375	8.16206E-09	0.00214375	0.000250842		0.000296112	0.000296112	0
1,1-Dimethylcyclohexane	0	0.00951659	2.75904E-07	0.00951659	0.00155861		0.00175825	0.00175825	3.01229E-07
n-Octane	0	0.00690810	3.54128E-08	0.00690810	0.000865447		0.00100361	0.00100361	3.84136E-08
Ethylbenzene	0	0.00168580	0.000176455	0.00168580	0.00494253		0.00493642	0.00493642	0.000189878
m-Xylene	0	0.00216191	0.000248183	0.00216191	0.00654855		0.00653813	0.00653813	0.000266907
p-Xylene	0	0.00223667	0.000218040	0.00223667	0.00640512		0.00639999	0.00639999	0.000234627
o-Xylene	0	0.00100431	0.000297590	0.00100431	0.00410843		0.00408943	0.00408943	0.000318153
n-Nonane	0	0.00516498	1.32490E-07	0.00516498	0.000911668		0.000989675	0.000989675	1.44727E-07
n-Decane	0	0.000704983	1.06485E-07	0.000704983	0.000169470		0.000176894	0.000176894	1.16837E-07
TEG	99.9880	0	98.5571	0	95.7236		94.4825	94.4825	98.5570
Water	0.0120069	0.0880844	1.44042	0.0880844	3.48846		3.45049	3.45049	1.44033
Methanol	0	0	0	0	0		0	0	0
Mass Flow	lb/h	lb/h	lb/h	lb/h	lb/h	lb/h	lb/h	lb/h	lb/h
H2S	0	277.930	4.85796E-06	277.930	1.53916	0	2.42405	2.42405	5.18307E-06
Nitrogen	0	9871.15	1.75616E-14	9871.15	0.00764916	0	0.712850	0.712850	0
Methane	0	228637	1.72412E-10	228637	2.15768	0	54.5290	54.5290	0
CO2	0	20023.0	2.36364E-07	20023.0	11.3894	0	42.2466	42.2466	0
Ethane	0	67098.6	1.00514E-08	67098.6	5.04355	0	40.8326	40.8326	0
Propane	0	53101.5	1.26981E-07	53101.5	10.1417	0	47.9290	47.9290	0
i-Butane	0	9230.69	7.65575E-08	9230.69	2.38613	0	8.94648	8.94648	0
n-Butane	0	21669.1	9.04491E-07	21669.1	10.5165	0	30.1792	30.1792	0
i-Pentane	0	5803.77	1.37823E-06	5803.77	4.28595	0	9.38826	9.38826	1.46571E-06
n-Pentane	0	5653.04	2.83278E-06	5653.04	5.58445	0	11.1699	11.1699	3.01578E-06
Neohexane	0	48.0776	1.92725E-07	48.0776	0.0577795	0	0.102671	0.102671	0
Cyclopentane	0	434.745	9.86846E-05	434.745	3.20128	0	3.99273	3.99273	0.000106988
2-Methylpentane	0	1038.84	1.05564E-05	1038.84	1.63166	0	2.63011	2.63011	1.14451E-05
3-Methylpentane	0	570.824	1.31763E-05	570.824	1.18141	0	1.77261	1.77261	1.42733E-05
n-Hexane	0	1092.01	2.15978E-05	1092.01	2.10488	0	3.14930	3.14930	2.34491E-05
Methylcyclopentane	0	556.769	0.000169130	556.769	4.36260	0	5.23012	5.23012	0.000183362
Benzene	0	379.674	0.0516120	379.674	22.7763	0	23.6047	23.6047	0.0559440
Cyclohexane	0	687.432	0.000449270	687.432	5.59371	0	6.57422	6.57422	0.000488127
2-Methylhexane	0	131.648	1.83162E-06	131.648	0.319190	0	0.442340	0.442340	1.97190E-06
3-Methylhexane	0	193.534	5.19927E-06	193.534	0.602506	0	0.795800	0.795800	5.60996E-06
1,1-Dimethylcyclopentane	0	253.323	0.000146795	253.323	2.26180	0	2.60549	2.60549	0.000159697
n-Heptane	0	167.516	6.15437E-06	167.516	0.532164	0	0.688300	0.688300	6.64376E-06
Methylcyclohexane	0	355.358	0.000346470	355.358	2.90872	0	3.32683	3.32683	0.000376977
1,1,2-Trimethylcyclopentane	0	17.6011	2.03743E-05	17.6011	0.108551	0	0.124967	0.124967	2.22966E-05
Toluene	0	198.006	0.177356	198.006	17.6239	0	17.9722	17.9722	0.191805
2-Methylheptane	0	65.4030	5.31843E-06	65.4030	0.248241	0	0.303697	0.303697	5.75126E-06
3-Methylheptane	0	9.17674	1.23329E-06	9.17674	0.0390244	0	0.0466725	0.0466725	0
1,1-Dimethylcyclohexane	0	40.7375	4.16893E-05	40.7375	0.242478	0	0.277131	0.277131	4.55315E-05
n-Octane	0	29.5714	5.35090E-06	29.5714	0.134641	0	0.158187	0.158187	5.80632E-06
Ethylbenzene	0	7.21639	0.0266625	7.21639	0.768928	0	0.778066	0.778066	0.0287005
m-Xylene	0	9.25445	0.0375007	9.25445	1.01878	0	1.03052	1.03052	0.0403437
p-Xylene	0	9.57447	0.0329460	9.57447	0.996468	0	1.00875	1.00875	0.0354644
o-Xylene	0	4.29913	0.0449661	4.29913	0.639163	0	0.644565	0.644565	0.0480896
n-Nonane	0	22.1096	2.00193E-05	22.1096	0.141831	0	0.155990	0.155990	2.18759E-05
n-Decane	0	3.01781	1.60900E-05	3.01781	0.0263651	0	0.0278816	0.0278816	1.76601E-05
TEG	5.20454	0	14892.0	0	14892.1	0	14892.1	14892.1	14897.1
Water	0.000624980	377.062	217.648	377.062	542.713	0	543.858	543.858	217.710
Methanol	0	0	0	0	0	0	0	0	0

Process Streams	13	14	15	16	18	20	22	23	24	25	26	27	28
Composition — Status:	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved
Phase: Total — From Block:	Reboiler	Regenerator	Regenerator	Condenser	L/R HEX	Rich Flash	Reflux Coil	Gly/Gly XHGR B	Reboiler	Gly/Gly XHGR A	Gas/Glycol HEX	PUMP-100	TEG Makeup
To Block:	Regenerator	Reboiler	Condenser	Regenerator	Regenerator	VLVE-100	Gly/Gly XHGR B	Rich Flash	L/R HEX	TEG Makeup	RCYL-1	Gas/Glycol HEX	PUMP-100
Mole Fraction	%	%	%	%	%	%	%	%	%	%	%	%	%
H2S	1.51302E-05	3.49088E-06	0.150255	0.000215028	0.0343963	0.0343963	0.0514966	0.0514966	1.28126E-07	1.28126E-07	1.28087E-07	1.28087E-07	1.28087E-07
Nitrogen	1.42068E-12	3.18886E-13	0.000908030	1.79363E-08	0.000207964	0.000207964	0.0184239	0.0184239	5.63498E-16	5.63498E-16	0	0	0
Methane	1.12493E-08	2.52906E-09	0.447272	1.74563E-05	0.102437	0.102437	2.46096	2.46096	9.66033E-12	9.66033E-12	0	0	0
CO2	1.74763E-06	3.95481E-07	0.860724	0.000362001	0.197103	0.197103	0.695014	0.695014	4.82758E-09	4.82758E-09	0	0	0
Ethane	1.72376E-07	3.88716E-08	0.557792	2.45367E-05	0.127749	0.127749	0.983187	0.983187	3.00472E-10	3.00472E-10	0	0	0
Propane	9.82724E-07	2.22289E-07	0.764841	2.80017E-05	0.175169	0.175169	0.786957	0.786957	2.58843E-09	2.58843E-09	0	0	0
i-Butane	3.55284E-07	8.05564E-08	0.136522	2.53539E-06	0.0312674	0.0312674	0.111444	0.111444	1.18397E-09	1.18397E-09	0	0	0
n-Butane	3.46388E-06	7.87290E-07	0.601707	2.39329E-05	0.137807	0.137807	0.375936	0.375936	1.39881E-08	1.39881E-08	0	0	0
i-Pentane	3.09540E-06	7.07164E-07	0.197547	4.56586E-06	0.0452437	0.0452437	0.0942116	0.0942116	1.71707E-08	1.71707E-08	1.71654E-08	1.71654E-08	1.71654E-08
n-Pentane	5.81539E-06	1.33092E-06	0.257397	5.83438E-06	0.0589510	0.0589510	0.112091	0.112091	3.52922E-08	3.52922E-08	3.52812E-08	3.52812E-08	3.52812E-08
Neohexane	1.89407E-07	4.40158E-08	0.00222967	2.19498E-08	0.000510658	0.000510658	0.000862609	0.000862609	2.01025E-09	2.01025E-09	0	0	0
Cyclopentane	7.99051E-05	1.88922E-05	0.151793	1.32618E-05	0.0347650	0.0347650	0.0412189	0.0412189	1.26480E-06	1.26480E-06	1.26441E-06	1.26441E-06	1.26441E-06
2-Methylpentane	9.31284E-06	2.17293E-06	0.0629647	1.41422E-06	0.0144207	0.0144207	0.0220973	0.0220973	1.10110E-07	1.10110E-07	1.10076E-07	1.10076E-07	1.10076E-07
3-Methylpentane	1.03534E-05	2.42737E-06	0.0455899	1.77427E-06	0.0104414	0.0104414	0.0148928	0.0148928	1.37438E-07	1.37438E-07	1.37395E-07	1.37395E-07	1.37395E-07
n-Hexane	1.71058E-05	4.00909E-06	0.0812252	1.27728E-06	0.0186030	0.0186030	0.0264593	0.0264593	2.25279E-07	2.25279E-07	2.25209E-07	2.25209E-07	2.25209E-07
Methylcyclopentane	0.000112747	2.66742E-05	0.172378	9.58097E-06	0.0394805	0.0394805	0.0449943	0.0449943	1.80640E-06	1.80640E-06	1.80583E-06	1.80583E-06	1.80583E-06
Benzene	0.0160824	0.00406571	0.968006	0.00165478	0.222078	0.222078	0.218792	0.218792	0.000593921	0.000593921	0.000593736	0.000593736	0.000593736
Cyclohexane	0.000246526	5.89824E-05	0.221017	2.06040E-05	0.0506217	0.0506217	0.0565574	0.0565574	4.79844E-06	4.79844E-06	4.79694E-06	4.79694E-06	4.79694E-06
2-Methylhexane	1.55468E-06	3.61233E-07	0.0105931	8.55508E-08	0.00242612	0.00242612	0.00319616	0.00319616	1.64307E-08	1.64307E-08	1.64255E-08	1.64255E-08	1.64255E-08
3-Methylhexane	4.01663E-06	9.36525E-07	0.0199955	1.63610E-07	0.00457957	0.00457957	0.00575011	0.00575011	4.66404E-08	4.66404E-08	4.66258E-08	4.66258E-08	4.66258E-08
1,1-Dimethylcyclopentane	7.41078E-05	1.76541E-05	0.0766001	2.20207E-06	0.0175446	0.0175446	0.0192127	0.0192127	1.34387E-06	1.34387E-06	1.34345E-06	1.34345E-06	1.34345E-06
n-Heptane	4.54322E-06	1.06121E-06	0.0176610	1.71474E-07	0.00404491	0.00404491	0.00497336	0.00497336	5.52081E-08	5.52081E-08	5.51908E-08	5.51908E-08	5.51908E-08
Methylcyclohexane	0.000150136	3.61144E-05	0.0985048	5.09237E-06	0.0225627	0.0225627	0.0245318	0.0245318	3.17184E-06	3.17184E-06	3.17085E-06	3.17085E-06	3.17085E-06
1,1,2-Trimethylcyclopentane	6.70344E-06	1.62922E-06	0.00321634	4.57061E-08	0.000736770	0.000736770	0.000806312	0.000806312	1.63206E-07	1.63206E-07	1.63156E-07	1.63156E-07	1.63156E-07
Toluene	0.0335261	0.00885734	0.630018	0.00102432	0.145680	0.145680	0.141224	0.141224	0.00173022	0.00173022	0.00172968	0.00172968	0.00172968
2-Methylheptane	3.05620E-06	7.17525E-07	0.00722669	6.04761E-08	0.00165515	0.00165515	0.00192493	0.00192493	4.18508E-08	4.18508E-08	4.18378E-08	4.18378E-08	4.18378E-08
3-Methylheptane	6.50750E-07	1.53397E-07	0.00113605	1.03337E-08	0.000260197	0.000260197	0.000295825	0.000295825	9.70480E-09	9.70480E-09	0	0	0
1,1-Dimethylcyclohexane	1.40518E-05	3.40883E-06	0.00718468	1.19973E-07	0.00164577	0.00164577	0.00178810	0.00178810	3.33947E-07	3.33947E-07	3.33843E-07	3.33843E-07	3.33843E-07
n-Octane	2.69601E-06	6.36985E-07	0.00391954	2.88906E-08	0.000897722	0.000897722	0.00100264	0.00100264	4.21064E-08	4.21064E-08	4.20932E-08	4.20932E-08	4.20932E-08
Ethylbenzene	0.00318774	0.000889684	0.0232598	2.86365E-05	0.00551625	0.00551625	0.00530619	0.00530619	0.000225744	0.000225744	0.000225673	0.000225673	0.000225673
m-Xylene	0.00447225	0.00124880	0.0307497	3.79326E-05	0.00730869	0.00730869	0.00702789	0.00702789	0.000317507	0.000317507	0.000317408	0.000317408	0.000317408
p-Xylene	0.00402470	0.00111857	0.0301931	3.70838E-05	0.00714861	0.00714861	0.00687940	0.00687940	0.000278944	0.000278944	0.000278857	0.000278857	0.000278857
o-Xylene	0.00449322	0.00130254	0.0186238	3.45528E-05	0.00458533	0.00458533	0.00439576	0.00439576	0.000380714	0.000380714	0.000380595	0.000380595	0.000380595
n-Nonane	6.64842E-06	1.59912E-06	0.00367694	1.02580E-08	0.000842243	0.000842243	0.000880584	0.000880584	1.40304E-07	1.40304E-07	1.40260E-07	1.40260E-07	1.40260E-07
n-Decane	3.46241E-06	8.54974E-07	0.000615836	9.32395E-10	0.000141130	0.000141130	0.000141879	0.000141879	1.01649E-07	1.01649E-07	1.01617E-07	1.01617E-07	1.01617E-07
TEG	4.46717	70.1580	0.431523	1.29232	75.5272	75.5272	71.7980	71.7980	89.1370	89.1370	89.1403	89.1403	89.1403
Water	95.4663	29.8243	92.9051	98.7041	22.9440	22.9440	21.8571	21.8571	10.8595	10.8595	10.8561	10.8561	10.8561
Methanol	0	0	0	0	0	0	0	0	0	0	0	0	0
Molar Flow	lbmol/h	lbmol/h	lbmol/h	lbmol/h	lbmol/h	lbmol/h	lbmol/h	lbmol/h	lbmol/h	lbmol/h	lbmol/h	lbmol/h	lbmol/h
H2S	4.86315E-06	5.00569E-06	0.0451834	2.15538E-05	0.0451619	0.0451619	0.0711263	0.0711263	1.42542E-07	1.42542E-07	1.42542E-07	1.42542E-07	1.42542E-07
Nitrogen	4.56634E-13	4.57261E-13	0.000273056	1.79788E-09	0.000273054	0.000273054	0.0254468	0.0254468	6.26899E-16	6.26899E-16	0	0	0
Methane	3.61576E-09	3.62650E-09	0.134500	1.74978E-06	0.134498	0.134498	3.39904	3.39904	1.07472E-11	1.07472E-11	0	0	0
CO2	5.61722E-07	5.67093E-07	0.258830	3.62860E-05	0.258794	0.258794	0.959943	0.959943	5.37074E-09	5.37074E-09	0	0	0
Ethane	5.54049E-08	5.57392E-08	0.167735	2.45949E-06	0.167732	0.167732	1.35796	1.35796	3.34279E-10	3.34279E-10	0	0	0
Propane	3.15867E-07	3.18747E-07	0.229997	2.80682E-06	0.229994	0.229994	1.08693	1.08693	2.87966E-09	2.87966E-09	0	0	0
i-Butane	1.14195E-07	1.15512E-07	0.0410539	2.54140E-07	0.0410537	0.0410537	0.153925	0.153925	1.31718E-09	1.31718E-09	0	0	0
n-Butane	1.11336E-06	1.12892E-06	0.180941	2.39897E-06	0.180938	0.180938	0.519237	0.519237	1.55619E-08	1.55619E-08	0	0	0
i-Pentane	9.94922E-07	1.01402E-06	0.0594048	4.57669E-07	0.0594044	0.0594044	0.130124	0.130124	1.91026E-08	1.91026E-08	1.91026E-08	1.91026E-08	1.91026E-08
n-Pentane	1.86918E-06	1.90845E-06	0.0774024	5.84822E-07	0.0774019	0.0774019	0.154818	0.154818	3.92630E-08	3.92630E-08	3.92630E-08	3.92630E-08	3.92630E-08
Neohexane	6.08792E-08	6.31156E-08	0.000670487	2.20019E-09	0.000670487	0.000670487	0.00119142	0.00119142	2.23643E-09	2.23643E-09	0	0	0
Cyclopentane	2.56831E-05	2.70902E-05	0.0456459	1.32932E-06	0.0456460	0.0456460	0.0569310	0.0569310	1.40711E-06	1.40711E-06	1.40711E-06	1.40711E-06	1.40711E-06
2-Methylpentane	2.99333E-06	3.11583E-06	0.0189342	1.41758E-07	0.0189342	0.0189342	0.0305204	0.0305204	1.22499E-07	1.22499E-07	1.22499E-07	1.22499E-07	1.22499E-07
3-Methylpentane	3.32778E-06	3.48068E-06	0.0137094	1.77848E-07	0.0137094	0.0137094	0.0205698	0.0205698	1.52902E-07	1.52902E-07	1.52902E-07	1.52902E-07	1.52902E-07
n-Hexane	5.49814E-06	5.74876E-06	0.0244254	1.28031E-07	0.0244255	0.0244255	0.0365452	0.0365452	2.50626E-07	2.50626E-07	2.50626E-07	2.50626E-07	2.50626E-07
Methylcyclopentane	3.62393E-05	3.82489E-05	0.0518363	9.60370E-07	0.0518373	0.0518373	0.0621454	0.0621454	2.00964E-06	2.00964E-06	2.00964E-06	2.00964E-06	2.00964E-06
Benzene	0.00516921	0.00582995	0.291091	0.000165870	0.291586	0.291586	0.302192	0.302192	0.000660745	0.000660745	0.000660745	0.000660745	0.000660745
Cyclohexane	7.92385E-05	8.45768E-05	0.0664623	2.06529E-06	0.0664656	0.0664656	0.0781163	0.0781163	5.33832E-06	5.33832E-06	5.33832E-06	5.33832E-06	5.33832E-06
2-Methylhexane	4.99704E-07	5.17983E-07	0.00318546	8.57538E-09	0.00318547	0.00318547	0.00441448	0.00441448	1.82793E-08	1.82793E-08	1.82793E-08	1.82793E-08	1.82793E-08
3-Methylhexane	1.29102E-06	1.34291E-06	0.00601288	1.63998E-08	0.00601292	0.00601292	0.00794196	0.00794196	5.18880E-08	5.18880E-08	5.18880E-08	5.18880E-08	5.18880E-08
1,1-Dimethylcyclopentane	2.38197E-05	2.53148E-05	0.0230346	2.20730E-07	0.0230358	0.0230358	0.0265363	0.0265363	1.49507E-06	1.49507E-06	1.49507E-06	1.49507E-06	1.49507E-06
n-Heptane	1.46028E-06	1.52170E-06	0.00531087	1.71881E-08	0.00531091	0.00531091	0.00686913	0.00686913	6.14196E-08	6.14196E-08	6.14196E-08	6.14196E-08	6.14196E-08
Methylcyclohexane	4.82568E-05	5.17855E-05	0.0296216	5.10445E-07	0.0296246	0.0296246	0.0338829	0.0338829	3.52871E-06	3.52871E-06	3.52871E-06	3.52871E-06	3.52871E-06
1,1,2-Trimethylcyclopentane	2.15462E-06	2.33619E-06	0.000967192	4.58145E-09	0.000967369	0.000967369	0.00111367	0.00111367	1.81569E-07	1.81569E-07	1.81569E-07	1.81569E-07	1.81569E-07
Toluene	0.0107759	0.0127008	0.189454	0.000102675	0.191276	0.191276	0.195057	0.195057	0.00192489	0.00192489	0.00192489	0.00192489	0.00192489
2-Methylheptane	9.82322E-07	1.02888E-06	0.00217315	6.06196E-09	0.00217319	0.00217319	0.00265868	0.00265868	4.65596E-08	4.65596E-08	4.65596E-08	4.65596E-08	4.65596E-08
3-Methylheptane	2.09164E-07	2.19961E-07	0.000341625	1.03582E-09	0.000341635	0.000341635	0.000408588	0.000408588	1.07967E-08	1.07967E-08	0	0	0
1,1-Dimethylcyclohexane	4.51651E-06	4.88803E-06	0.00216052	1.20257E-08	0.00216088	0.00216088	0.00246969	0.00246969	3.71520E-07	3.71520E-07	3.71520E-07	3.71520E-07	3.71520E-07
n-Octane	8.66550E-07	9.13393E-07	0.00117865	2.89591E-09	0.00117870	0.00117870	0.00138483	0.00138483	4.68439E-08	4.68439E-08	4.68439E-08	4.68439E-08	4.68439E-08
Ethylbenzene	0.00102460	0.00127575	0.00699449	2.87044E-06	0.00724276	0.00724276	0.00732883	0.00732883	0.000251142	0.000251142	0.000251142	0.000251142	0.000251142
m-Xylene	0.00143747	0.00179070	0.00924679	3.80226E-06	0.00959622	0.00959622	0.00970681	0.00970681	0.000353230	0.000353230	0.000353230	0.000353230	0.000353230
p-Xylene	0.00129362	0.00160395	0.00907942	3.71718E-06	0.00938603	0.00938603	0.00950173	0.00950173	0.000310329	0.000310329	0.000310329	0.000310329	0.000310329
o-Xylene	0.00144421	0.00186776	0.00560039	3.46348E-06	0.00602047	0.00602047	0.00607136	0.00607136	0.000423549	0.000423549	0.000423549	0.000423549	0.000423549
n-Nonane	2.13693E-06	2.29302E-06	0.00110570	1.02823E-09	0.00110585	0.00110585	0.00121625	0.00121625	1.56090E-07	1.56090E-07	1.56090E-07	1.56090E-07	1.56090E-07
n-Decane	1.11289E-06	1.22597E-06	0.000185189	9.34607E-11	0.000185302	0.000185302	0.000195961	0.000195961	1.13086E-07	1.13086E-07	1.13086E-07	1.13086E-07	1.13086E-07
TEG	1.43584	100.602	0.129764	0.129539	99.1662	99.1662	99.1662	99.1662	99.1660	99.1660	99.2006	99.2006	99.2006
Water	30.6847	42.7661	27.9377	9.89383	30.1252	30.1252	30.1887	30.1887	12.0813	12.0813	12.0814	12.0814	12.0814
Methanol	0	0	0	0	0	0	0	0	0	0	0	0	0
Mass Fraction	%	%	%	%	%	%	%	%	%	%	%	%	%
H2S	2.15139E-05	1.07427E-06	0.238734	0.000371521	0.00989344	0.00989344	0.0153793	0.0153793	3.21505E-08	3.21505E-08	3.21394E-08	3.21394E-08	3.21394E-08
Nitrogen	1.66044E-12	8.06616E-14	0.00118589	2.54727E-08	4.91675E-05	4.91675E-05	0.00452266	0.00452266	1.16224E-16	1.16224E-16	0	0	0
Methane	7.52939E-09	3.66350E-10	0.334518	1.41972E-05	0.0138692	0.0138692	0.345958	0.345958	1.14104E-12	1.14104E-12	0	0	0
CO2	3.20891E-06	1.57158E-07	1.76598	0.000807669	0.0732089	0.0732089	0.268032	0.268032	1.56428E-09	1.56428E-09	0	0	0
Ethane	2.16251E-07	1.05540E-08	0.781931	3.74036E-05	0.0324190	0.0324190	0.259062	0.259062	6.65215E-11	6.65215E-11	0	0	0
Propane	1.80796E-06	8.85071E-08	1.57233	6.25976E-05	0.0651892	0.0651892	0.304084	0.304084	8.40371E-10	8.40371E-10	0	0	0
i-Butane	8.61549E-07	4.22774E-08	0.369933	7.47075E-06	0.0153376	0.0153376	0.0567607	0.0567607	5.06666E-10	5.06666E-10	0	0	0
n-Butane	8.39976E-06	4.13183E-07	1.63044	7.05205E-05	0.0675984	0.0675984	0.191471	0.191471	5.98602E-09	5.98602E-09	0	0	0
i-Pentane	9.31769E-06	4.60696E-07	0.664471	1.67005E-05	0.0275493	0.0275493	0.0595636	0.0595636	9.12129E-09	9.12129E-09	9.11815E-09	9.11815E-09	9.11815E-09
n-Pentane	1.75053E-05	8.67053E-07	0.865783	2.13403E-05	0.0358959	0.0358959	0.0708674	0.0708674	1.87476E-08	1.87476E-08	1.87412E-08	1.87412E-08	1.87412E-08
Neohexane	6.80992E-07	3.42497E-08	0.00895776	9.58940E-08	0.000371396	0.000371396	0.000651395	0.000651395	1.27547E-09	1.27547E-09	0	0	0
Cyclopentane	0.000233808	1.19639E-05	0.496306	4.71521E-05	0.0205773	0.0205773	0.0253318	0.0253318	6.53105E-07	6.53105E-07	6.52880E-07	6.52880E-07	6.52880E-07
2-Methylpentane	3.34833E-05	1.69081E-06	0.252963	6.17843E-06	0.0104880	0.0104880	0.0166867	0.0166867	6.98631E-08	6.98631E-08	6.98390E-08	6.98390E-08	6.98390E-08
3-Methylpentane	3.72244E-05	1.88879E-06	0.183159	7.75139E-06	0.00759392	0.00759392	0.0112463	0.0112463	8.72025E-08	8.72025E-08	8.71724E-08	8.71724E-08	8.71724E-08
n-Hexane	6.15019E-05	3.11957E-06	0.326325	5.58017E-06	0.0135298	0.0135298	0.0199806	0.0199806	1.42936E-07	1.42936E-07	1.42887E-07	1.42887E-07	1.42887E-07
Methylcyclopentane	0.000395888	2.02703E-05	0.676336	4.08780E-05	0.0280420	0.0280420	0.0331824	0.0331824	1.11932E-06	1.11932E-06	1.11893E-06	1.11893E-06	1.11893E-06
Benzene	0.0524120	0.00286760	3.52510	0.00655290	0.146402	0.146402	0.149760	0.149760	0.000341573	0.000341573	0.000341456	0.000341456	0.000341456
Cyclohexane	0.000865624	4.48220E-05	0.867171	8.79087E-05	0.0359554	0.0359554	0.0417100	0.0417100	2.97332E-06	2.97332E-06	2.97229E-06	2.97229E-06	2.97229E-06
2-Methylhexane	6.49949E-06	3.26835E-07	0.0494850	4.34588E-07	0.00205170	0.00205170	0.00280641	0.00280641	1.21219E-08	1.21219E-08	1.21177E-08	1.21177E-08	1.21177E-08
3-Methylhexane	1.67919E-05	8.47346E-07	0.0934081	8.31118E-07	0.00387280	0.00387280	0.00504893	0.00504893	3.44093E-08	3.44093E-08	3.43975E-08	3.43975E-08	3.43975E-08
1,1-Dimethylcyclopentane	0.000303582	1.56517E-05	0.350635	1.09612E-05	0.0145384	0.0145384	0.0165305	0.0165305	9.71503E-07	9.71503E-07	9.71168E-07	9.71168E-07	9.71168E-07
n-Heptane	1.89934E-05	9.60158E-07	0.0825026	8.71066E-07	0.00342065	0.00342065	0.00436690	0.00436690	4.07302E-08	4.07302E-08	4.07162E-08	4.07162E-08	4.07162E-08
Methylcyclohexane	0.000615033	3.20181E-05	0.450903	2.53482E-05	0.0186967	0.0186967	0.0211070	0.0211070	2.29297E-06	2.29297E-06	2.29218E-06	2.29218E-06	2.29218E-06
1,1,2-Trimethylcyclopentane	3.13835E-05	1.65077E-06	0.0168260	2.60012E-07	0.000697747	0.000697747	0.000792853	0.000792853	1.34840E-07	1.34840E-07	1.34793E-07	1.34793E-07	1.34793E-07
Toluene	0.128880	0.00736902	2.70626	0.00478468	0.113283	0.113283	0.114024	0.114024	0.00117376	0.00117376	0.00117336	0.00117336	0.00117336
2-Methylheptane	1.45653E-05	7.40078E-07	0.0384849	3.50216E-07	0.00159565	0.00159565	0.00192680	0.00192680	3.51979E-08	3.51979E-08	3.51858E-08	3.51858E-08	3.51858E-08
3-Methylheptane	3.10135E-06	1.58218E-07	0.00604992	5.98422E-08	0.000250842	0.000250842	0.000296112	0.000296112	8.16206E-09	8.16206E-09	0	0	0
1,1-Dimethylcyclohexane	6.57862E-05	3.45393E-06	0.0375860	6.82498E-07	0.00155861	0.00155861	0.00175825	0.00175825	2.75904E-07	2.75904E-07	2.75809E-07	2.75809E-07	2.75809E-07
n-Octane	1.28487E-05	6.57006E-07	0.0208731	1.67305E-07	0.000865447	0.000865447	0.00100361	0.00100361	3.54128E-08	3.54128E-08	3.54006E-08	3.54006E-08	3.54006E-08
Ethylbenzene	0.0141198	0.000852870	0.115123	0.000154127	0.00494253	0.00494253	0.00493642	0.00493642	0.000176455	0.000176455	0.000176395	0.000176395	0.000176395
m-Xylene	0.0198093	0.00119713	0.152194	0.000204160	0.00654855	0.00654855	0.00653813	0.00653813	0.000248183	0.000248183	0.000248098	0.000248098	0.000248098
p-Xylene	0.0178270	0.00107228	0.149439	0.000199592	0.00640512	0.00640512	0.00639999	0.00639999	0.000218040	0.000218040	0.000217965	0.000217965	0.000217965
o-Xylene	0.0199022	0.00124865	0.0921775	0.000185970	0.00410843	0.00410843	0.00408943	0.00408943	0.000297590	0.000297590	0.000297488	0.000297488	0.000297488
n-Nonane	3.55759E-05	1.85191E-06	0.0219856	6.66982E-08	0.000911668	0.000911668	0.000989675	0.000989675	1.32490E-07	1.32490E-07	1.32444E-07	1.32444E-07	1.32444E-07
n-Decane	2.05537E-05	1.09842E-06	0.00408499	6.72552E-09	0.000169470	0.000169470	0.000176894	0.000176894	1.06485E-07	1.06485E-07	1.06449E-07	1.06449E-07	1.06449E-07
TEG	27.9890	95.1337	3.02115	9.83877	95.7236	95.7236	94.4825	94.4825	98.5571	98.5571	98.5576	98.5576	98.5576
Water	71.7552	4.85152	78.0292	90.1475	3.48846	3.48846	3.45049	3.45049	1.44042	1.44042	1.43993	1.43993	1.43993
Methanol	0	0	0	0	0	0	0	0	0	0	0	0	0
Mass Flow	lb/h	lb/h	lb/h	lb/h	lb/h	lb/h	lb/h	lb/h	lb/h	lb/h	lb/h	lb/h	lb/h
H2S	0.000165740	0.000170598	1.53989	0.000734573	1.53916	1.53916	2.42405	2.42405	4.85796E-06	4.85796E-06	4.85796E-06	4.85796E-06	4.85796E-06
Nitrogen	1.27919E-11	1.28094E-11	0.00764922	5.03648E-08	0.00764916	0.00764916	0.712850	0.712850	1.75616E-14	1.75616E-14	0	0	0
Methane	5.80056E-08	5.81780E-08	2.15771	2.80707E-05	2.15768	2.15768	54.5290	54.5290	1.72412E-10	1.72412E-10	0	0	0
CO2	2.47211E-05	2.49575E-05	11.3910	0.00159693	11.3894	11.3894	42.2466	42.2466	2.36364E-07	2.36364E-07	0	0	0
Ethane	1.66597E-06	1.67602E-06	5.04362	7.39546E-05	5.04355	5.04355	40.8326	40.8326	1.00514E-08	1.00514E-08	0	0	0
Propane	1.39284E-05	1.40553E-05	10.1419	0.000123768	10.1417	10.1417	47.9290	47.9290	1.26981E-07	1.26981E-07	0	0	0
i-Butane	6.63728E-06	6.71384E-06	2.38614	1.47712E-05	2.38613	2.38613	8.94648	8.94648	7.65575E-08	7.65575E-08	0	0	0
n-Butane	6.47108E-05	6.56153E-05	10.5167	0.000139434	10.5165	10.5165	30.1792	30.1792	9.04491E-07	9.04491E-07	0	0	0
i-Pentane	7.17824E-05	7.31606E-05	4.28598	3.30203E-05	4.28595	4.28595	9.38826	9.38826	1.37823E-06	1.37823E-06	1.37823E-06	1.37823E-06	1.37823E-06
n-Pentane	0.000134859	0.000137692	5.58449	4.21942E-05	5.58445	5.58445	11.1699	11.1699	2.83278E-06	2.83278E-06	2.83278E-06	2.83278E-06	2.83278E-06
Neohexane	5.24628E-06	5.43901E-06	0.0577795	1.89602E-07	0.0577795	0.0577795	0.102671	0.102671	1.92725E-07	1.92725E-07	0	0	0
Cyclopentane	0.00180123	0.00189991	3.20128	9.32294E-05	3.20128	3.20128	3.99273	3.99273	9.86846E-05	9.86846E-05	9.86846E-05	9.86846E-05	9.86846E-05
2-Methylpentane	0.000257952	0.000268508	1.63166	1.22160E-05	1.63166	1.63166	2.63011	2.63011	1.05564E-05	1.05564E-05	1.05564E-05	1.05564E-05	1.05564E-05
3-Methylpentane	0.000286773	0.000299949	1.18142	1.53261E-05	1.18141	1.18141	1.77261	1.77261	1.31763E-05	1.31763E-05	1.31763E-05	1.31763E-05	1.31763E-05
n-Hexane	0.000473804	0.000495402	2.10487	1.10331E-05	2.10488	2.10488	3.14930	3.14930	2.15978E-05	2.15978E-05	2.15978E-05	2.15978E-05	2.15978E-05
Methylcyclopentane	0.00304988	0.00321901	4.36251	8.08243E-05	4.36260	4.36260	5.23012	5.23012	0.000169130	0.000169130	0.000169130	0.000169130	0.000169130
Benzene	0.403776	0.455388	22.7376	0.0129564	22.7763	22.7763	23.6047	23.6047	0.0516120	0.0516120	0.0516120	0.0516120	0.0516120
Cyclohexane	0.00666867	0.00711794	5.59344	0.000173814	5.59371	5.59371	6.57422	6.57422	0.000449270	0.000449270	0.000449270	0.000449270	0.000449270
2-Methylhexane	5.00713E-05	5.19029E-05	0.319189	8.59270E-07	0.319190	0.319190	0.442340	0.442340	1.83162E-06	1.83162E-06	1.83162E-06	1.83162E-06	1.83162E-06
3-Methylhexane	0.000129363	0.000134562	0.602503	1.64329E-06	0.602506	0.602506	0.795800	0.795800	5.19927E-06	5.19927E-06	5.19927E-06	5.19927E-06	5.19927E-06
1,1-Dimethylcyclopentane	0.00233876	0.00248556	2.26167	2.16726E-05	2.26180	2.26180	2.60549	2.60549	0.000146795	0.000146795	0.000146795	0.000146795	0.000146795
n-Heptane	0.000146323	0.000152477	0.532159	1.72228E-06	0.532164	0.532164	0.688300	0.688300	6.15437E-06	6.15437E-06	6.15437E-06	6.15437E-06	6.15437E-06
Methylcyclohexane	0.00473815	0.00508462	2.90842	5.01186E-05	2.90872	2.90872	3.32683	3.32683	0.000346470	0.000346470	0.000346470	0.000346470	0.000346470
1,1,2-Trimethylcyclopentane	0.000241775	0.000262150	0.108531	5.14097E-07	0.108551	0.108551	0.124967	0.124967	2.03743E-05	2.03743E-05	2.03743E-05	2.03743E-05	2.03743E-05
Toluene	0.992878	1.17023	17.4560	0.00946031	17.6239	17.6239	17.9722	17.9722	0.177356	0.177356	0.177356	0.177356	0.177356
2-Methylheptane	0.000112209	0.000117528	0.248236	6.92448E-07	0.248241	0.248241	0.303697	0.303697	5.31843E-06	5.31843E-06	5.31843E-06	5.31843E-06	5.31843E-06
3-Methylheptane	2.38925E-05	2.51258E-05	0.0390233	1.18320E-07	0.0390244	0.0390244	0.0466725	0.0466725	1.23329E-06	1.23329E-06	0	0	0
1,1-Dimethylcyclohexane	0.000506810	0.000548499	0.242438	1.34944E-06	0.242478	0.242478	0.277131	0.277131	4.16893E-05	4.16893E-05	4.16893E-05	4.16893E-05	4.16893E-05
n-Octane	9.89847E-05	0.000104336	0.134636	3.30796E-07	0.134641	0.134641	0.158187	0.158187	5.35090E-06	5.35090E-06	5.35090E-06	5.35090E-06	5.35090E-06
Ethylbenzene	0.108777	0.135440	0.742570	0.000304740	0.768928	0.768928	0.778066	0.778066	0.0266625	0.0266625	0.0266625	0.0266625	0.0266625
m-Xylene	0.152609	0.190110	0.981685	0.000403667	1.01878	1.01878	1.03052	1.03052	0.0375007	0.0375007	0.0375007	0.0375007	0.0375007
p-Xylene	0.137337	0.170283	0.963917	0.000394635	0.996468	0.996468	1.00875	1.00875	0.0329460	0.0329460	0.0329460	0.0329460	0.0329460
o-Xylene	0.153325	0.198291	0.594565	0.000367700	0.639163	0.639163	0.644565	0.644565	0.0449661	0.0449661	0.0449661	0.0449661	0.0449661
n-Nonane	0.000274073	0.000294092	0.141812	1.31876E-07	0.141831	0.141831	0.155990	0.155990	2.00193E-05	2.00193E-05	2.00193E-05	2.00193E-05	2.00193E-05
n-Decane	0.000158344	0.000174434	0.0263490	1.32977E-08	0.0263651	0.0263651	0.0278816	0.0278816	1.60900E-05	1.60900E-05	1.60900E-05	1.60900E-05	1.60900E-05
TEG	215.624	15107.7	19.4871	19.4533	14892.1	14892.1	14892.1	14892.1	14892.0	14892.0	14897.2	14897.2	14897.2
Water	552.794	770.443	503.305	178.240	542.713	542.713	543.858	543.858	217.648	217.648	217.649	217.649	217.649
Methanol	0	0	0	0	0	0	0	0	0	0	0	0	0

Process Streams		Blowdown	BTEX Emissions	Contactor OVHD	Dry Gas	Flash Gas	HC	Regen OVHD	Slop	TEG	Wet Gas Feed
Properties	Status:	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved
Phase: Total	From Block:	TEG Makeup	BTEX Condenser	T-600	Gas/Glycol HEX	Rich Flash	Rich Flash	Condenser	BTEX Condenser	--	T-600 Scrubber
	To Block:	--	BTEX to Flare	Gas/Glycol HEX	--	Flash to Flare	Flash Cond	BTEX Condenser	BTEX Slop	TEG Makeup	T-600
Property	**Units**										
Temperature	°F		120*	121.319	124.474	146.857		212.072	120	120*	119.886
Pressure	psia	4	1.5	1140	1135	50	50	1.5	1.5	5*	1143
Mole Fraction Vapor	%		100	100	100	100		100	0	0	100
Mole Fraction Light Liquid	%		0	0	0	0		0	2.12673	100	0
Mole Fraction Heavy Liquid	%		0	0	0	0		0	97.8733	0	0
Phase Mole Fraction	%	100	100	100	100	100		100	100	100	100
Molecular Weight	lb/lbmol	135.819	51.0128	22.1914	22.1914	29.9684		22.3121	19.4812	150.041	22.1941
Mass Density	lb/ft^3		0.135049	5.13561	5.05403	0.303830		0.0505847	60.2734	68.7362	5.17886
Molar Flow	lbmol/h	0	1.79984	19260.7	19260.7	6.81977	0	20.0475	18.2476	0.0346917	19287.5
Mass Flow	lb/h	0	91.8148	427422	427422	204.378	0	447.301	355.486	5.20517	428069
Vapor Volumetric Flow	ft^3/h	0	679.864	83227.1	84570.5	672.671	0	8842.61	5.89789	0.0757267	82657.0
Liquid Volumetric Flow	gpm	0	84.7623	10376.4	10543.9	83.8655	0	1102.46	0.735321	0.00944126	10305.3
Std Vapor Volumetric Flow	MMSCFD	0	0.0163922	175.419	175.419	0.0621118	0	0.182585	0.166192	0.000315959	175.663
Std Liquid Volumetric Flow	sgpm	0	0.283171	2344.00	2344.00	0.926771	0	1.00865	0.725482	0.00921187	2345.93
Compressibility			0.983447	0.800258	0.805281	0.980384		0.990973	0.000841497	0.00691125	0.797700
Specific Gravity			1.76134	0.766213	0.766213	1.03473		0.770379	0.966405	1.10209	0.766305
API Gravity									12.8226	-7.13116	
Enthalpy	Btu/h	0	-105737	-7.21993E+08	-7.21041E+08	-344940		-1.93918E+06	-2.18650E+06	-11894.4	-7.24763E+08
Mass Enthalpy	Btu/lb	-2282.46	-1151.63	-1689.18	-1686.95	-1687.76		-4335.29	-6150.75	-2285.11	-1693.10
Mass Cp	Btu/(lb*°F)		0.358581	0.649982	0.646273	0.441438		0.437664	0.926602	0.551593	0.651863
Ideal Gas CpCv Ratio			1.12282	1.23052	1.22970	1.17985		1.25752	1.30676	1.03437	1.23091
Dynamic Viscosity	cP		0.00980603	0.0142712	0.0142624	0.0116288		0.0127371	0.551218	13.8328	0.0142837
Kinematic Viscosity	cSt		4.53296	0.173480	0.176171	2.38938		15.7193	0.570922	12.5633	0.172182
Thermal Conductivity	Btu/(h*ft*°F)		0.0107271	0.0236792	0.0237259	0.0171882		0.0147751	0.332909	0.112309	0.0236629
Surface Tension	lbf/ft								0.00430234?	0.00294474	
Net Ideal Gas Heating Value	Btu/ft^3	3366.87	2122.57	1134.70	1134.70	1348.19		270.376	87.6871	3773.23	1133.88
Net Liquid Heating Value	Btu/lb	9135.97	15615.6	19338.9	19338.9	16963.9		3788.96	734.380	9283.53	19321.6
Gross Ideal Gas Heating Value	Btu/ft^3	3685.94	2284.00	1249.78	1249.78	1475.89		334.107	141.782	4124.75	1248.91
Gross Liquid Heating Value	Btu/lb	10027.5	16816.6	21307.2	21307.2	18581.4		4872.89	1788.07	10172.6	21288.9

Process Streams		1	2	3	4	5	11	12	13	14	15
Properties	Status:	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved
Phase: Total	From Block:	L/R HEX	To Dehy	VLVE-100	T-600 Scrubber	VLVE-102	T-600	RCYL-1	Reboiler	Regenerator	Regenerator
	To Block:	Gly/Gly XHGR A	T-600 Scrubber	L/R HEX	To Slug Catcher	Reflux Coil	VLVE-102	T-600	Regenerator	Reboiler	Condenser
Property	**Units**										
Temperature	°F	236.233	120	146.772		124.796	120.918	131.334	385*	305.051	292.859
Pressure	psia	4	1145	2*	1143	60	1143	1148	4.5	4.5	1.5
Mole Fraction Vapor	%	0	100	0.555963		4.68882	0	0	100	0	100
Mole Fraction Light Liquid	%	100	0	99.4440		95.3112	100	100	0	100	0
Mole Fraction Heavy Liquid	%	0	0	0		0	0	0	0	0	0
Phase Mole Fraction	%	100	100	100		100	100	100	100	100	100
Molecular Weight	lb/lbmol	135.819	22.1941	118.488		114.118	114.118	135.820	23.9683	110.748	21.4498
Mass Density	lb/ft^3	64.3912	5.18738	30.3593		20.7396	66.8253	68.2703	0.0511562	62.0035	0.0433175
Molar Flow	lbmol/h	111.251	19287.5	131.299	0	138.118	138.118	111.289	32.1420	143.393	30.0712
Mass Flow	lb/h	15110.1	428069	15557.4	0	15761.7	15761.7	15115.3	770.389	15880.5	645.021
Vapor Volumetric Flow	ft^3/h	234.660	82521.2	512.442	0	759.982	235.865	221.403	15059.5	256.122	14890.5
Liquid Volumetric Flow	gpm	29.2564	10288.4	63.8889	0	94.7511	29.4065	27.6035	1877.55	31.9321	1856.48
Std Vapor Volumetric Flow	MMSCFD	1.01323	175.663	1.19582	0	1.25793	1.25793	1.01358	0.292737	1.30597	0.273877
Std Liquid Volumetric Flow	sgpm	26.7908	2345.93	27.7994	0	28.7262	28.7262	26.8	1.49118	28.2820	1.39946
Compressibility		0.00528045	0.797608	0.0100125		0.0655279	0.317303	0.364707	0.992196	0.00417793	0.993068
Specific Gravity		1.03243	0.766305				1.07146	1.09462	0.827563	0.994144	0.740606
API Gravity		-6.52840					-3.14124	-6.69621		-5.86249	
Enthalpy	Btu/h	-3.44866E+07	-7.24763E+08	-3.76063E+07		-3.81555E+07	-3.81555E+07	-3.53859E+07	-3.52848E+06	-3.79686E+07	-2.97302E+06
Mass Enthalpy	Btu/lb	-2282.36	-1693.10	-2417.27		-2420.77	-2420.77	-2341.07	-4580.13	-2390.90	-4609.18
Mass Cp	Btu/(lb*°F)	0.610572	0.652132	0.589194		0.578020	0.577526	0.566480	0.476132	0.660613	0.454495
Ideal Gas CpCv Ratio		1.03344	1.23088	1.04230		1.04521	1.04544	1.03746	1.21226	1.03917	1.25764
Dynamic Viscosity	cP	2.68904	0.0142923				8.57199	11.5388	0.0158109	1.35944	0.0142892
Kinematic Viscosity	cSt	2.60706	0.172001				8.00792	10.5513	19.2946	1.36875	20.5931
Thermal Conductivity	Btu/(h*ft*°F)	0.113843?	0.0236770				0.113841?	0.114362?	0.0190621	0.116859?	0.0172511
Surface Tension	lbf/ft	0.00259303?					0.00280137	0.00292559		0.00244849?	
Net Ideal Gas Heating Value	Btu/ft^3	3366.87	1133.88	2894.08		2817.75	2817.75	3366.89	171.567	2650.63	196.560
Net Liquid Heating Value	Btu/lb	9135.97	19321.6	8982.23		9085.73	9085.73	9135.99	1882.82	8784.11	2615.37
Gross Ideal Gas Heating Value	Btu/ft^3	3685.94	1248.91	3174.16		3090.31	3090.31	3685.96	235.448	2912.50	257.117
Gross Liquid Heating Value	Btu/lb	10027.5	21288.9	9879.26		9992.10	9992.10	10027.5	2894.22	9681.42	3686.73

Process Streams		16	18	20	22	23	24	25	26	27	28
Properties	Status:	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved
Phase: Total	From Block:	Condenser	L/R HEX	Rich Flash	Reflux Coil	Gly/Gly XHGR B	Reboiler	Gly/Gly XHGR A	Gas/Glycol HEX	PUMP-100	TEG Makeup
	To Block:	Regenerator	Regenerator	VLVE-100	Gly/Gly XHGR B	Rich Flash	L/R HEX	TEG Makeup	RCYL-1	Gas/Glycol HEX	PUMP-100
Property	**Units**										
Temperature	°F	212.072	290*	146.857	146.720	146.857	385	236.070	131.319	238.335	236.032
Pressure	psia	1.5	1.5	50	55	50*	4.5	4	1148	1153*	4
Mole Fraction Vapor	%	0	3.25200	0	4.87249	4.93762	0	0	0	0	0
Mole Fraction Light Liquid	%	100	96.7480	100	95.1275	95.0624	100	100	100	100	100
Mole Fraction Heavy Liquid	%	0	0	0	0	0	0	0	0	0	0
Phase Mole Fraction	%	100	100	100	100	100	100	100	100	100	100
Molecular Weight	lb/lbmol	19.7253	118.488	118.488	114.118	114.118	135.819	135.819	135.824	135.824	135.824
Mass Density	lb/ft^3	60.6316	6.60405	67.2211	18.6143	17.4335	58.6952	64.3972	68.2709	64.4337	64.3986
Molar Flow	lbmol/h	10.0237	131.299	131.299	138.118	138.118	111.251	111.251	111.286	111.286	111.286
Mass Flow	lb/h	197.721	15557.4	15557.4	15761.7	15761.7	15110.1	15110.1	15115.3	15115.3	15115.3
Vapor Volumetric Flow	ft^3/h	3.26102	2355.73	231.436	846.754	904.107	257.433	234.639	221.401	234.586	234.714
Liquid Volumetric Flow	gpm	0.406568	293.702	28.8543	105.569	112.720	32.0955	29.2536	27.6033	29.2471	29.2631
Std Vapor Volumetric Flow	MMSCFD	0.0912923	1.19582	1.19582	1.25793	1.25793	1.01323	1.01323	1.01355	1.01355	1.01355
Std Liquid Volumetric Flow	sgpm	0.390805	27.7994	27.7994	28.7262	28.7262	26.7908	26.7908	26.8	26.8	26.8*
Compressibility		0.000730910	0.0361192	0.0175200	0.0656595	0.0650626	0.00490025	0.00528119	0.364723	0.328602	0.00528153
Specific Gravity		0.972147		1.07780			0.941099	1.03252	1.09463	1.03311	1.03255
API Gravity		7.84698		-5.39922			-6.52847	-6.52840	-6.69644	-6.69717	-6.52855
Enthalpy	Btu/h	-1.23657E+06	-3.61766E+07	-3.76063E+07	-3.79528E+07	-3.79513E+07	-3.30568E+07	-3.44881E+07	-3.53859E+07	-3.44334E+07	-3.45000E+07
Mass Enthalpy	Btu/lb	-6254.12	-2325.37	-2417.27	-2407.90	-2407.81	-2187.74	-2282.46	-2341.07	-2278.06	-2282.46
Mass Cp	Btu/(lb*°F)	0.987270	0.641055	0.589568	0.587638	0.587648	0.659946	0.610512	0.566470	0.609274	0.610495
Ideal Gas CpCv Ratio		1.28774	1.03692	1.04230	1.04397	1.04396	1.03012	1.03345	1.03746	1.03338	1.03345
Dynamic Viscosity	cP	0.333367		7.58361			0.820342	2.69351	11.5421	2.74441	2.69456
Kinematic Viscosity	cSt	0.343244		7.04287			0.872513	2.61114	10.5543	2.65898	2.61211
Thermal Conductivity	Btu/(h*ft*°F)	0.352638?		0.116409?			0.108096?	0.113846?	0.114361?	0.113802?	0.113846?
Surface Tension	lbf/ft	0.00392349?		0.00288220			0.00207581?	0.00259357?	0.00292564	0.00258855	0.00259368
Net Ideal Gas Heating Value	Btu/ft^3	48.9272	2894.08	2894.08	2817.75	2817.75	3366.87	3366.87	3366.99	3366.99	3366.99
Net Liquid Heating Value	Btu/lb	-39.6308	8982.23	8982.23	9085.73	9085.73	9135.97	9135.97	9136.02	9136.02	9136.02
Gross Ideal Gas Heating Value	Btu/ft^3	103.137	3174.16	3174.16	3090.31	3090.31	3685.94	3685.94	3686.07	3686.07	3686.07
Gross Liquid Heating Value	Btu/lb	1003.29	9879.26	9879.26	9992.10	9992.10	10027.5	10027.5	10027.5	10027.5	10027.5

Process Streams		Blowdown	BTEX Emissions	Contactor OVHD	Dry Gas	Flash Gas	HC	Regen OVHD	Slop	TEG	Wet Gas Feed
Composition	Status:	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved
Phase: Vapor	From Block:	TEG Makeup	BTEX Condenser	T-600	Gas/Glycol HEX	Rich Flash	Rich Flash	Condenser	BTEX Condenser	--	T-600 Scrubber
	To Block:	--	BTEX to Flare	Gas/Glycol HEX	--	Flash to Flare	Flash Cond	BTEX Condenser	BTEX Slop	TEG Makeup	T-600
Mole Fraction			%	%	%	%		%			%
H2S			2.46249	0.0419709	0.0419709	0.380723		0.225274			0.0422813
Nitrogen			0.0151666	1.82936	1.82936	0.369129		0.00136204			1.82695
Methane			7.46586	73.9777	73.9777	47.8689		0.670899			73.8924
CO2			14.2958	2.35719	2.35719	10.2811		1.29091			2.35889
Ethane			9.27883	11.5787	11.5787	17.4527		0.836676			11.5696
Propane			12.6228	6.24666	6.24666	12.5655		1.14725			6.24361
i-Butane			2.22590	0.823758	0.823758	1.65507		0.204782			0.823410
n-Butane			9.68226	1.93296	1.93296	4.96056		0.902549			1.93296
i-Pentane			3.00247	0.416972	0.416972	1.03697		0.296319			0.417067
n-Pentane			3.81091	0.405997	0.405997	1.13518		0.386093			0.406235
Neohexane			0.0314239	0.00289042	0.00289042	0.00763859		0.00334449			0.00289257
Cyclopentane			2.05804	0.0318885	0.0318885	0.165475		0.227683			0.0321393
2-Methylpentane			0.835214	0.0624297	0.0624297	0.169892		0.0944464			0.0625011
3-Methylpentane			0.588155	0.0342845	0.0342845	0.100595		0.0683840			0.0343434
n-Hexane			1.00624	0.0656024	0.0656024	0.177714		0.121837			0.0657006
Methylcyclopentane			2.06265	0.0340253	0.0340253	0.151150		0.258563			0.0343001
Benzene			9.75120	0.0236709	0.0236709	0.155517		1.45118			0.0252010
Cyclohexane			2.37715	0.0420032	0.0420032	0.170836		0.331515			0.0423498
2-Methylhexane			0.103869	0.00679839	0.00679839	0.0180214		0.0158895			0.00681182
3-Methylhexane			0.185874	0.00998664	0.00998664	0.0282861		0.0299932			0.0100139
1,1-Dimethylcyclopentane			0.722933	0.0132576	0.0132576	0.0513279		0.114899			0.0133767
n-Heptane			0.146189	0.00864409	0.00864409	0.0228485		0.0264914			0.00866768
Methylcyclohexane			0.783301	0.0186149	0.0186149	0.0624408		0.147755			0.0187646
1,1,2-Trimethylcyclopentane			0.0196177	0.000808600	0.000808600	0.00214519		0.00482449			0.000813248
Toluene			3.64022	0.0101556	0.0101556	0.0554414		0.944514			0.0111420
2-Methylheptane			0.0398465	0.00295890	0.00295890	0.00711882		0.0108400			0.00296857
3-Methylheptane			0.00591494	0.000414981	0.000414981	0.000981761		0.00170408			0.000416522
1,1-Dimethylcyclohexane			0.0362115	0.00187205	0.00187205	0.00452820		0.0107770			0.00188225
n-Octane			0.0168995	0.00133689	0.00133689	0.00302257		0.00587930			0.00134221
Ethylbenzene			0.0547702	0.000316266	0.000316266	0.00126205		0.0348753			0.000352422
m-Xylene			0.0759388	0.000404159	0.000404159	0.00162160		0.0461055			0.000451953
p-Xylene			0.0757815	0.000420635	0.000420635	0.00169644		0.0452711			0.000467581
o-Xylene			0.0471989	0.000181076	0.000181076	0.000746128		0.0279184			0.000209954
n-Nonane			0.00786176	0.000888712	0.000888712	0.00161874		0.00551540			0.000893781
n-Decane			0.000557135	0.000109105	0.000109105	0.000156289		0.000923754			0.000109968
TEG			7.44150E-09	0.000174874	0.000174874	0.000557341		0.00112234			0
Water			10.4645	0.0146732	0.0146732	0.931560		90.0056			0.108516
Methanol			0	0	0	0		0			0
Molar Flow			lbmol/h	lbmol/h	lbmol/h	lbmol/h		lbmol/h			lbmol/h
H2S			0.0443209	8.08389	8.08389	0.0259644		0.0451618			8.15501
Nitrogen			0.000272974	352.347	352.347	0.0251737		0.000273054			352.372
Methane			0.134373	14248.6	14248.6	3.26455		0.134498			14252.0
CO2			0.257302	454.011	454.011	0.701149		0.258794			454.971
Ethane			0.167004	2230.13	2230.13	1.19023		0.167732			2231.48
Propane			0.227189	1203.15	1203.15	0.856939		0.229994			1204.24
i-Butane			0.0400625	158.661	158.661	0.112872		0.0410537			158.815
n-Butane			0.174265	372.300	372.300	0.338299		0.180938			372.820
i-Pentane			0.0540396	80.3116	80.3116	0.0707192		0.0594043			80.4417
n-Pentane			0.0685902	78.1977	78.1977	0.0774163		0.0774018			78.3525
Neohexane			0.000565578	0.556713	0.556713	0.000520934		0.000670485			0.557905
Cyclopentane			0.0370414	6.14194	6.14194	0.0112850		0.0456446			6.19887
2-Methylpentane			0.0150325	12.0244	12.0244	0.0115862		0.0189341			12.0549
3-Methylpentane			0.0105858	6.60342	6.60342	0.00686035		0.0137093			6.62399
n-Hexane			0.0181107	12.6355	12.6355	0.0121197		0.0244252			12.6720
Methylcyclopentane			0.0371243	6.55350	6.55350	0.0103081		0.0518353			6.61564
Benzene			0.175506	4.55917	4.55917	0.0106059		0.290925			4.86065
Cyclohexane			0.0427849	8.09010	8.09010	0.0116506		0.0664603			8.16821
2-Methylhexane			0.00186947	1.30941	1.30941	0.00122901		0.00318545			1.31383
3-Methylhexane			0.00334543	1.92349	1.92349	0.00192904		0.00601287			1.93144
1,1-Dimethylcyclopentane			0.0130116	2.55350	2.55350	0.00350044		0.0230343			2.58003
n-Heptane			0.00263116	1.66491	1.66491	0.00155822		0.00531085			1.67178
Methylcyclohexane			0.0140981	3.58535	3.58535	0.00425832		0.0296210			3.61923
1,1,2-Trimethylcyclopentane			0.000353086	0.155742	0.155742	0.000146297		0.000967187			0.156855
Toluene			0.0655180	1.95604	1.95604	0.00378098		0.189351			2.14901
2-Methylheptane			0.000717173	0.569905	0.569905	0.000485487		0.00217315			0.572563
3-Methylheptane			0.000106459	0.0799281	0.0799281	6.69538E-05		0.000341624			0.0803367
1,1-Dimethylcyclohexane			0.000651749	0.360570	0.360570	0.000308813		0.00216051			0.363039
n-Octane			0.000304164	0.257494	0.257494	0.000206132		0.00117865			0.258879
Ethylbenzene			0.000985775	0.0609149	0.0609149	8.60692E-05		0.00699162			0.0679734
m-Xylene			0.00136677	0.0778436	0.0778436	0.000110590		0.00924299			0.0871704
p-Xylene			0.00136394	0.0810171	0.0810171	0.000115693		0.00907570			0.0901848
o-Xylene			0.000849503	0.0348764	0.0348764	5.08842E-05		0.00559692			0.0404948
n-Nonane			0.000141499	0.171172	0.171172	0.000110394		0.00110570			0.172388
n-Decane			1.00275E-05	0.0210143	0.0210143	1.06585E-05		0.000185189			0.0212101
TEG			1.33935E-10	0.0336819	0.0336819	3.80093E-05		0.000225001			0
Water			0.188343	2.82615	2.82615	0.0635302		18.0438			20.9301
Methanol			0	0	0	0		0			0
Mass Fraction			%	%	%	%		%			%
H2S			1.64515	0.0644576	0.0644576	0.432968		0.344098			0.0649265
Nitrogen			0.00832864	2.30929	2.30929	0.345048		0.00171007			2.30597
Methane			2.34785	53.4793	53.4793	25.6248		0.482378			53.4113
CO2			12.3332	4.67472	4.67472	15.0981		2.54625			4.67753
Ethane			5.46932	15.6889	15.6889	17.5113		1.12755			15.6747
Propane			10.9111	12.4125	12.4125	18.4889		2.26732			12.4049
i-Butane			2.53611	2.15753	2.15753	3.20991		0.533451			2.15636
n-Butane			11.0316	5.06266	5.06266	9.62075		2.35111			5.06206
i-Pentane			4.24647	1.35566	1.35566	2.49651		0.958181			1.35580
n-Pentane			5.38987	1.31998	1.31998	2.73293		1.24848			1.32059
Neohexane			0.0530840	0.0112243	0.0112243	0.0219651		0.0129173			0.0112313
Cyclopentane			2.82942	0.100779	0.100779	0.387248		0.715667			0.101560
2-Methylpentane			1.41092	0.242431	0.242431	0.488530		0.364777			0.242680
3-Methylpentane			0.993563	0.133136	0.133136	0.289265		0.264118			0.133349
n-Hexane			1.69983	0.254752	0.254752	0.511024		0.470568			0.255103
Methylcyclopentane			3.40290	0.129038	0.129038	0.424469		0.975279			0.130065
Benzene			14.9312	0.0833193	0.0833193	0.405351		5.08040			0.0886947
Cyclohexane			3.92176	0.159294	0.159294	0.479755		1.25045			0.160589
2-Methylhexane			0.204025	0.0306970	0.0306970	0.0602559		0.0713587			0.0307540
3-Methylhexane			0.365103	0.0450931	0.0450931	0.0945768		0.134697			0.0452109
1,1-Dimethylcyclopentane			1.39145	0.0586582	0.0586582	0.168166		0.505622			0.0591782
n-Heptane			0.287151	0.0390310	0.0390310	0.0763960		0.118971			0.0391329
Methylcyclohexane			1.50764	0.0823615	0.0823615	0.204576		0.650205			0.0830142
1,1,2-Trimethylcyclopentane			0.0431528	0.00408874	0.00408874	0.00803237		0.0242635			0.00411176
Toluene			6.57489	0.0421658	0.0421658	0.170456		3.90040			0.0462558
2-Methylheptane			0.0892248	0.0152307	0.0152307	0.0271343		0.0554963			0.0152786
3-Methylheptane			0.0132448	0.00213608	0.00213608	0.00374211		0.00872415			0.00214375
1,1-Dimethylcyclohexane			0.0796543	0.00946616	0.00946616	0.0169552		0.0541998			0.00951659
n-Octane			0.0378416	0.00688154	0.00688154	0.0115209		0.0300995			0.00690810
Ethylbenzene			0.113985	0.00151303	0.00151303	0.00447091		0.165943			0.00168580
m-Xylene			0.158039	0.00193351	0.00193351	0.00574463		0.219378			0.00216191
p-Xylene			0.157712	0.00201234	0.00201234	0.00600975		0.215408			0.00223667
o-Xylene			0.0982276	0.000866277	0.000866277	0.00264321		0.132841			0.00100431
n-Nonane			0.0197658	0.00513630	0.00513630	0.00692768		0.0317038			0.00516498
n-Decane			0.00155392	0.000699530	0.000699530	0.000742016		0.00589067			0.000704983
TEG			2.19065E-08	0.00118340	0.00118340	0.00279286		0.00755400			0
Water			3.69554	0.0119119	0.0119119	0.560000		72.6725			0.0880844
Methanol			0	0	0	0		0			0
Mass Flow			lb/h	lb/h	lb/h	lb/h		lb/h			lb/h
H2S			1.51050	275.506	275.506	0.884890		1.53915			277.930
Nitrogen			0.00764692	9870.43	9870.43	0.705201		0.00764916			9871.15
Methane			2.15568	228582	228582	52.3713		2.15768			228637
CO2			11.3237	19980.8	19980.8	30.8572		11.3894			20023.0
Ethane			5.02164	67057.8	67057.8	35.7891		5.04355			67098.6
Propane			10.0180	53053.6	53053.6	37.7873		10.1417			53101.5

Process Streams		1	2	3	4	5	11	12	13	14	15
Composition	Status:	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved
Phase: Vapor	From Block:	L/R HEX	To Dehy	VLVE-100	T-600 Scrubber	VLVE-102	T-600	RCYL-1	Reboiler	Regenerator	Regenerator
	To Block:	Gly/Gly XHGR A	T-600 Scrubber	L/R HEX	To Slug Catcher	Reflux Coil	VLVE-102	T-600	Regenerator	Reboiler	Condenser
Mole Fraction			%	%		%			%		%
H2S			0.0422813	1.17830		0.313633			1.51302E-05		0.150255
Nitrogen			1.82695	0.0364668		0.388186			1.42068E-12		0.000908030
Methane			73.8924	16.7680		49.9892			1.12493E-08		0.447272
CO2			2.35889	18.7125		9.77428			1.74763E-06		0.860724
Ethane			11.5696	17.1048		17.7142			1.72376E-07		0.557792
Propane			6.24361	18.9608		12.3191			9.82724E-07		0.764841
i-Butane			0.823410	2.95124		1.58555			3.55284E-07		0.136522
n-Butane			1.93296	10.6172		4.58389			3.46388E-06		0.601707
i-Pentane			0.417067	2.60698		0.913176			3.09540E-06		0.197547
n-Pentane			0.406235	3.00702		0.977883			5.81539E-06		0.257397
Neohexane			0.00289257	0.0215137		0.00665107			1.89407E-07		0.00222967
Cyclopentane			0.0321393	0.557713		0.122598			7.99051E-05		0.151793
2-Methylpentane			0.0625011	0.502201		0.144378			9.31284E-06		0.0629647
3-Methylpentane			0.0343434	0.308062		0.0834934			1.03534E-05		0.0455899
n-Hexane			0.0657006	0.543585		0.146557			1.71058E-05		0.0812252
Methylcyclopentane			0.0343001	0.514020		0.107692			0.000112747		0.172378
Benzene			0.0252010	0.561801		0.0938366			0.0160824		0.968006
Cyclohexane			0.0423498	0.584639		0.122317			0.000246526		0.221017
2-Methylhexane			0.00681182	0.0567811		0.0137146			1.55468E-06		0.0105931
3-Methylhexane			0.0100139	0.0910968		0.0209382			4.01663E-06		0.0199955
1,1-Dimethylcyclopentane			0.0133767	0.176265		0.0352501			7.41078E-05		0.0766001
n-Heptane			0.00866768	0.0740681		0.0167794			4.54322E-06		0.0176610
Methylcyclohexane			0.0187646	0.214149		0.0434153			0.000150136		0.0985048
1,1,2-Trimethylcyclopentane			0.000813248	0.00728937		0.00155443			6.70344E-06		0.00321634
Toluene			0.0111420	0.199254		0.0320289			0.0335261		0.630018
2-Methylheptane			0.00296857	0.0234851		0.00503897			3.05620E-06		0.00722669
3-Methylheptane			0.000416522	0.00326625		0.000686306			6.50750E-07		0.00113605
1,1-Dimethylcyclohexane			0.00188225	0.0153729		0.00320316			1.40518E-05		0.00718468
n-Octane			0.00134221	0.0101042		0.00208322			2.69601E-06		0.00391954
Ethylbenzene			0.000352422	0.00448795		0.000706880			0.00318774		0.0232598
m-Xylene			0.000451953	0.00576435		0.000907374			0.00447225		0.0307497
p-Xylene			0.000467581	0.00603318		0.000956465			0.00402470		0.0301931
o-Xylene			0.000209954	0.00265225		0.000408976			0.00449322		0.0186238
n-Nonane			0.000893781	0.00548622		0.00104491			6.64842E-06		0.00367694
n-Decane			0.000109968	0.000531289		9.65531E-05			3.46241E-06		0.000615836
TEG			0	0.00190057		0.000164747			4.46717		0.431523
Water			0.108516	3.56520		0.434468			95.4663		92.9051
Methanol			0	0		0			0		0
Molar Flow			lbmol/h	lbmol/h		lbmol/h			lbmol/h		lbmol/h
H2S			8.15501	0.00860125		0.0203112			4.86315E-06		0.0451834
Nitrogen			352.372	0.000266197		0.0251394			4.56634E-13		0.000273056
Methane			14252.0	0.122401		3.23736			3.61576E-09		0.134500
CO2			454.971	0.136596		0.632994			5.61722E-07		0.258830
Ethane			2231.48	0.124860		1.14719			5.54049E-08		0.167735
Propane			1204.24	0.138409		0.797797			3.15867E-07		0.229997
i-Butane			158.815	0.0215432		0.102682			1.14195E-07		0.0410539
n-Butane			372.820	0.0775026		0.296858			1.11336E-06		0.180941
i-Pentane			80.4417	0.0190302		0.0591384			9.94922E-07		0.0594048
n-Pentane			78.3525	0.0219504		0.0633288			1.86918E-06		0.0774024
Neohexane			0.557905	0.000157044		0.000430731			6.08792E-08		0.000670487
Cyclopentane			6.19887	0.00407114		0.00793961			2.56831E-05		0.0456459
2-Methylpentane			12.0549	0.00366592		0.00935012			2.99333E-06		0.0189342
3-Methylpentane			6.62399	0.00224876		0.00540713			3.32778E-06		0.0137094
n-Hexane			12.6720	0.00396802		0.00949120			5.49814E-06		0.0244254
Methylcyclopentane			6.61564	0.00375220		0.00697425			3.62393E-05		0.0518363
Benzene			4.86065	0.00410099		0.00607697			0.00516921		0.291091
Cyclohexane			8.16821	0.00426769		0.00792138			7.92385E-05		0.0664623
2-Methylhexane			1.31383	0.000414486		0.000888176			4.99704E-07		0.00318546
3-Methylhexane			1.93144	0.000664980		0.00135598			1.29102E-06		0.00601288
1,1-Dimethylcyclopentane			2.58003	0.00128669		0.00228284			2.38197E-05		0.0230346
n-Heptane			1.67178	0.000540676		0.00108666			1.46028E-06		0.00531087
Methylcyclohexane			3.61923	0.00156323		0.00281163			4.82568E-05		0.0296216
1,1,2-Trimethylcyclopentane			0.156855	5.32103E-05		0.000100667			2.15462E-06		0.000967192
Toluene			2.14901	0.00145450		0.00207423			0.0107759		0.189454
2-Methylheptane			0.572563	0.000171435		0.000326330			9.82322E-07		0.00217315
3-Methylheptane			0.0803367	2.38427E-05		4.44460E-05			2.09164E-07		0.000341625
1,1-Dimethylcyclohexane			0.363039	0.000112218		0.000207440			4.51651E-06		0.00216052
n-Octane			0.258879	7.37578E-05		0.000134912			8.66550E-07		0.00117865
Ethylbenzene			0.0679734	3.27607E-05		4.57784E-05			0.00102460		0.00699449
m-Xylene			0.0871704	4.20781E-05		5.87626E-05			0.00143747		0.00924679
p-Xylene			0.0901848	4.40405E-05		6.19418E-05			0.00129362		0.00907942
o-Xylene			0.0404948	1.93607E-05		2.64858E-05			0.00144421		0.00560039
n-Nonane			0.172388	4.00478E-05		6.76694E-05			2.13693E-06		0.00110570
n-Decane			0.0212101	3.87825E-06		6.25289E-06			1.11289E-06		0.000185189
TEG			0	1.38736E-05		1.06692E-05			1.43584		0.129764
Water			20.9301	0.0260250		0.0281367			30.6847		27.9377
Methanol			0	0		0			0		0
Mass Fraction			%	%		%			%		%
H2S			0.0649265	0.973572		0.366277			2.15139E-05		0.238734
Nitrogen			2.30597	0.0247665		0.372634			1.66044E-12		0.00118589
Methane			53.4113	6.52158		27.4805			7.52939E-09		0.334518
CO2			4.67753	19.9655		14.7404			3.20891E-06		1.76598
Ethane			15.6747	12.4692		18.2523			2.16251E-07		0.781931
Propane			12.4049	20.2700		18.6144			1.80796E-06		1.57233
i-Butane			2.15636	4.15861		3.15790			8.61549E-07		0.369933
n-Butane			5.06206	14.9608		9.12963			8.39976E-06		1.63044
i-Pentane			1.35580	4.56004		2.25767			9.31769E-06		0.664471
n-Pentane			1.32059	5.25976		2.41765			1.75053E-05		0.865783
Neohexane			0.0112313	0.0449468		0.0196405			6.80992E-07		0.00895776
Cyclopentane			0.101560	0.948274		0.294634			0.000233808		0.496306
2-Methylpentane			0.242680	1.04921		0.426346			3.34833E-05		0.252963
3-Methylpentane			0.133349	0.643609		0.246554			3.72244E-05		0.183159
n-Hexane			0.255103	1.13567		0.432779			6.15019E-05		0.326325
Methylcyclopentane			0.130065	1.04878		0.310572			0.000395888		0.676336
Benzene			0.0886947	1.06390		0.251169			0.0524120		3.52510
Cyclohexane			0.160589	1.19287		0.352749			0.000865624		0.867171
2-Methylhexane			0.0307540	0.137937		0.0470909			6.49949E-06		0.0494850
3-Methylhexane			0.0452109	0.221299		0.0718941			1.67919E-05		0.0934081
1,1-Dimethylcyclopentane			0.0591782	0.419583		0.118601			0.000303582		0.350635
n-Heptane			0.0391329	0.179932		0.0576143			1.89934E-05		0.0825026
Methylcyclohexane			0.0830142	0.509763		0.146073			0.000615033		0.450903
1,1,2-Trimethylcyclopentane			0.00411176	0.0198305		0.00597710			3.13835E-05		0.0168260
Toluene			0.0462558	0.445091		0.101125			0.128880		2.70626
2-Methylheptane			0.0152786	0.0650382		0.0197239			1.45653E-05		0.0384849
3-Methylheptane			0.00214375	0.00904536		0.00268639			3.10135E-06		0.00604992
1,1-Dimethylcyclohexane			0.00951659	0.0418214		0.0123168			6.57862E-05		0.0375860
n-Octane			0.00690810	0.0279819		0.00815431			1.28487E-05		0.0208731
Ethylbenzene			0.00168580	0.0115513		0.00257161			0.0141198		0.115123
m-Xylene			0.00216191	0.0148365		0.00330099			0.0198093		0.152194
p-Xylene			0.00223667	0.0155285		0.00347958			0.0178270		0.149439
o-Xylene			0.00100431	0.00682648		0.00148784			0.0199022		0.0921775
n-Nonane			0.00516498	0.0170588		0.00459229			3.55759E-05		0.0219856
n-Decane			0.000704983	0.00183265		0.000470752			2.05537E-05		0.00408499
TEG			0	0.00691953		0.000847788			27.9890		3.02115
Water			0.0880844	1.55714		0.268211			71.7552		78.0292
Methanol			0	0		0			0		0
Mass Flow			lb/h	lb/h		lb/h			lb/h		lb/h
H2S			277.930	0.293138		0.692224			0.000165740		1.53989
Nitrogen			9871.15	0.00745709		0.704239			1.27919E-11		0.00764922
Methane			228637	1.96362		51.9353			5.80056E-08		2.15771
CO2			20023.0	6.01152		27.8578			2.47211E-05		11.3910
Ethane			67098.6	3.75442		34.4949			1.66597E-06		5.04362
Propane			53101.5	6.10321		35.1793			1.39284E-05		10.1419

Process Streams		16	18	20	22	23	24	25	26	27	28
Composition	Status:	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved
Phase: Vapor	From Block:	Condenser	L/R HEX	Rich Flash	Reflux Coil	Gly/Gly XHGR B	Reboiler	Gly/Gly XHGR A	Gas/Glycol HEX	PUMP-100	TEG Makeup
	To Block:	Regenerator	Regenerator	VLVE-100	Gly/Gly XHGR B	Rich Flash	L/R HEX	TEG Makeup	RCYL-1	Gas/Glycol HEX	PUMP-100
Mole Fraction			%		%	%					
H2S			0.812074		0.364622	0.380723					
Nitrogen			0.00635108		0.373689	0.369129					
Methane			3.09442		48.3317	47.8689					
CO2			5.61319		10.1655	10.2811					
Ethane			3.76717		17.4888	17.4527					
Propane			5.03540		12.4951	12.5655					
i-Butane			0.882548		1.63824	1.65507					
n-Butane			3.79693		4.87559	4.96056					
i-Pentane			1.19414		1.01033	1.03697					
n-Pentane			1.52794		1.10196	1.13518					
Neohexane			0.0121073		0.00737999	0.00763859					
Cyclopentane			0.686261		0.156608	0.165475					
2-Methylpentane			0.327808		0.163390	0.169892					
3-Methylpentane			0.228241		0.0963803	0.100595					
n-Hexane			0.408272		0.170273	0.177714					
Methylcyclopentane			0.757582		0.142765	0.151150					
Benzene			2.40796		0.145253	0.155517					
Cyclohexane			0.905017		0.161185	0.170836					
2-Methylhexane			0.0547290		0.0171968	0.0180214					
3-Methylhexane			0.100110		0.0269132	0.0282861					
1,1-Dimethylcyclopentane			0.316888		0.0483749	0.0513279					
n-Heptane			0.0865164		0.0217170	0.0228485					
Methylcyclohexane			0.384450		0.0588484	0.0624408					
1,1,2-Trimethylcyclopentane			0.0119329		0.00202443	0.00214519					
Toluene			1.17495		0.0517672	0.0554414					
2-Methylheptane			0.0335224		0.00674608	0.00711882					
3-Methylheptane			0.00508203		0.000929056	0.000981761					
1,1-Dimethylcyclohexane			0.0269140		0.00427219	0.00452820					
n-Octane			0.0170985		0.00285753	0.00302257					
Ethylbenzene			0.0333075		0.00117914	0.00126205					
m-Xylene			0.0434526		0.00151511	0.00162160					
p-Xylene			0.0437468		0.00158508	0.00169644					
o-Xylene			0.0228348		0.000696969	0.000746128					
n-Nonane			0.0137679		0.00152505	0.00161874					
n-Decane			0.00187119		0.000146989	0.000156289					
TEG			0.436612		0.000520871	0.000557341					
Water			65.7288		0.862436	0.931560					
Methanol			0		0	0					
Molar Flow			lbmol/h		lbmol/h	lbmol/h					
H2S			0.0346742		0.0245383	0.0259644					
Nitrogen			0.000271181		0.0251485	0.0251737					
Methane			0.132127		3.25263	3.26455					
CO2			0.239674		0.684121	0.701149					
Ethane			0.160852		1.17696	1.19023					
Propane			0.215003		0.840895	0.856939					
i-Butane			0.0376834		0.110250	0.112872					
n-Butane			0.162123		0.328118	0.338299					
i-Pentane			0.0509878		0.0679933	0.0707192					
n-Pentane			0.0652405		0.0741600	0.0774163					
Neohexane			0.000516960		0.000496659	0.000520934					
Cyclopentane			0.0293022		0.0105394	0.0112850					
2-Methylpentane			0.0139968		0.0109959	0.0115862					
3-Methylpentane			0.00974553		0.00648621	0.00686035					
n-Hexane			0.0174325		0.0114591	0.0121197					
Methylcyclopentane			0.0323475		0.00960782	0.0103081					
Benzene			0.102816		0.00977526	0.0106059					
Cyclohexane			0.0386427		0.0108474	0.0116506					
2-Methylhexane			0.00233684		0.00115731	0.00122901					
3-Methylhexane			0.00427451		0.00181120	0.00192904					
1,1-Dimethylcyclopentane			0.0135306		0.00325553	0.00350044					
n-Heptane			0.00369411		0.00146151	0.00155822					
Methylcyclohexane			0.0164154		0.00396038	0.00425832					
1,1,2-Trimethylcyclopentane			0.000509514		0.000136240	0.000146297					
Toluene			0.0501685		0.00348383	0.00378098					
2-Methylheptane			0.00143135		0.000453998	0.000485487					
3-Methylheptane			0.000216994		6.25236E-05	6.69538E-05					
1,1-Dimethylcyclohexane			0.00114919		0.000287510	0.000308813					
n-Octane			0.000730078		0.000192306	0.000206132					
Ethylbenzene			0.00142217		7.93540E-05	8.60692E-05					
m-Xylene			0.00185536		0.000101964	0.000110590					
p-Xylene			0.00186792		0.000106673	0.000115693					
o-Xylene			0.000975007		4.69047E-05	5.08842E-05					
n-Nonane			0.000587865		0.000102633	0.000110394					
n-Decane			7.98966E-05		9.89209E-06	1.06585E-05					
TEG			0.0186426		3.50536E-05	3.80093E-05					
Water			2.80651		0.0580402	0.0635302					
Methanol			0		0	0					
Mass Fraction			%		%	%					
H2S			0.902248		0.417106	0.432968					
Nitrogen			0.00580006		0.351374	0.345048					
Methane			1.61834		26.0253	25.6248					
CO2			8.05333		15.0166	15.0981					
Ethane			3.69279		17.6511	17.5113					
Propane			7.23850		18.4939	18.4889					
i-Butane			1.67224		3.19604	3.20991					
n-Butane			7.19440		9.51179	9.62075					
i-Pentane			2.80868		2.44673	2.49651					
n-Pentane			3.59380		2.66864	2.73293					
Neohexane			0.0340133		0.0213468	0.0219651					
Cyclopentane			1.56903		0.368664	0.387248					
2-Methylpentane			0.920919		0.472610	0.488530					
3-Methylpentane			0.641205		0.278782	0.289265					
n-Hexane			1.14697		0.492519	0.511024					
Methylcyclopentane			2.07851		0.403291	0.424469					
Benzene			6.13175		0.380834	0.405351					
Cyclohexane			2.48301		0.455324	0.479755					
2-Methylhexane			0.178777		0.0578386	0.0602559					
3-Methylhexane			0.327017		0.0905179	0.0945768					
1,1-Dimethylcyclopentane			1.01432		0.159427	0.168166					
n-Heptane			0.282614		0.0730413	0.0763960					
Methylcyclohexane			1.23058		0.193945	0.204576					
1,1,2-Trimethylcyclopentane			0.0436521		0.00762498	0.00803237					
Toluene			3.52923		0.160099	0.170456					
2-Methylheptane			0.124833		0.0258654	0.0271343					
3-Methylheptane			0.0189248		0.00356213	0.00374211					
1,1-Dimethylcyclohexane			0.0984554		0.0160911	0.0169552					
n-Octane			0.0636725		0.0109562	0.0115209					
Ethylbenzene			0.115277		0.00420186	0.00447091					
m-Xylene			0.150389		0.00539908	0.00574463					
p-Xylene			0.151407		0.00564841	0.00600975					
o-Xylene			0.0790309		0.00248364	0.00264321					
n-Nonane			0.0575652		0.00656524	0.00692768					
n-Decane			0.00867931		0.000701985	0.000742016					
TEG			2.13750		0.00262552	0.00279286					
Water			38.6026		0.521508	0.560000					
Methanol			0		0	0					
Mass Flow			lb/h		lb/h	lb/h					
H2S			1.18173		0.836288	0.884890					
Nitrogen			0.00759669		0.704496	0.705201					
Methane			2.11964		52.1802	52.3713					
CO2			10.5479		30.1078	30.8572					
Ethane			4.83667		35.3900	35.7891					
Propane			9.48070		37.0798	37.7873					

i-Butane			2.32852	9221.75	9221.75	6.56035		2.38613			9230.69		9230.69	1.25214		5.96810			6.63728E-06		2.38614		2.19024		6.40798	6.56035					
n-Butane			10.1287	21638.9	21638.9	19.6627		10.5165			21669.1		21669.1	4.50462		17.2540			6.47108E-05		10.5167		9.42294		19.0709	19.6627					
i-Pentane			3.89889	5794.39	5794.39	5.10230		4.28595			5803.77		5803.77	1.37301		4.26676			7.17824E-05		4.28598		3.67870		4.90563	5.10230					
n-Pentane			4.94870	5641.87	5641.87	5.58550		5.58445			5653.04		5653.04	1.58369		4.56910			0.000134859		5.58449		4.70702		5.35055	5.58550					
Neohexane			0.0487389	47.9750	47.9750	0.0448917		0.0577793			48.0776		48.0776	0.0135333		0.0371184			5.24628E-06		0.0577795		0.0445493		0.0427997	0.0448917					
Cyclopentane			2.59782	430.752	430.752	0.791448		3.20119			434.745		434.745	0.285521		0.556828			0.00180123		3.20128		2.05505		0.739162	0.791448					
2-Methylpentane			1.29543	1036.20	1036.20	0.998446		1.63165			1038.84		1038.84	0.315912		0.805750			0.000257952		1.63166		1.20618		0.947572	0.998446					
3-Methylpentane			0.912238	569.052	569.052	0.591193		1.18140			570.824		570.824	0.193788		0.465962			0.000286773		1.18142		0.839825		0.558951	0.591193					
n-Hexane			1.56070	1088.86	1088.86	1.04442		2.10485			1092.01		1092.01	0.341945		0.817908			0.000473804		2.10487		1.50226		0.987490	1.04442					
Methylcyclopentane			3.12437	551.539	551.539	0.867520		4.36243			556.769		556.769	0.315783		0.586949			0.00304988		4.36251		2.72235		0.808589	0.867520					
Benzene			13.7091	356.125	356.125	0.828447		22.7247			379.674		379.674	0.320336		0.474684			0.403776		22.7376		8.03113		0.763563	0.828447					
Cyclohexane			3.60076	680.859	680.859	0.980512		5.59326			687.432		687.432	0.359167		0.666659			0.00666867		5.59344		3.25215		0.912914	0.980512					
2-Methylhexane			0.187325	131.206	131.206	0.123150		0.319188			131.648		131.648	0.0415323		0.0889969			5.00713E-05		0.319189		0.234156		0.115965	0.123150					
3-Methylhexane			0.335218	192.738	192.738	0.193294		0.602501			193.534		193.534	0.0666323		0.135872			0.000129363		0.602503		0.428315		0.181486	0.193294					
1,1-Dimethylcyclopentane			1.27756	250.718	250.718	0.343694		2.26165			253.323		253.323	0.126335		0.224143			0.00233876		2.26167		1.32852		0.319648	0.343694					
n-Heptane			0.263647	166.827	166.827	0.156136		0.532157			167.516		167.516	0.0541767		0.108885			0.000146323		0.532159		0.370157		0.146446	0.156136					
Methylcyclohexane			1.38424	352.031	352.031	0.418108		2.90837			355.358		355.358	0.153487		0.276063			0.00473815		2.90842		1.61176		0.388854	0.418108					
1,1,2-Trimethylcyclopentane			0.0396207	17.4762	17.4762	0.0164164		0.108531			17.6011		17.6011	0.00597087		0.0112961			0.000241775		0.108531		0.0571739		0.0152879	0.0164164					
Toluene			6.03672	180.226	180.226	0.348373		17.4465			198.006		198.006	0.134015		0.191116			0.992878		17.4560		4.62245		0.320995	0.348373					
2-Methylheptane			0.0819216	65.0994	65.0994	0.0554565		0.248235			65.4030		65.4030	0.0195827		0.0372762			0.000112209		0.248236		0.163501		0.0518595	0.0554565					
3-Methylheptane			0.0121607	9.13006	9.13006	0.00764804		0.0390232			9.17674		9.17674	0.00272352		0.00507700			2.38925E-05		0.0390233		0.0247869		0.00714198	0.00764804					
1,1-Dimethylcyclohexane			0.0731345	40.4605	40.4605	0.0346527		0.242436			40.7375		40.7375	0.0125922		0.0232774			0.000506810		0.242438		0.128953		0.0322622	0.0346527					
n-Octane			0.0347442	29.4132	29.4132	0.0235462		0.134635			29.5714		29.5714	0.00842524		0.0154108			9.89847E-05		0.134636		0.0833957		0.0219668	0.0235462					
Ethylbenzene			0.104655	6.46703	6.46703	0.00913753		0.742265			7.21639		7.21639	0.00347804		0.00486007			0.108777		0.742570		0.150985		0.00842462	0.00913753					
m-Xylene			0.145104	8.26427	8.26427	0.0117407		0.981282			9.25445		9.25445	0.00446722		0.00623853			0.152609		0.981685		0.196974		0.0108250	0.0117407					
p-Xylene			0.144803	8.60118	8.60118	0.0122826		0.963522			9.57447		9.57447	0.00467556		0.00657605			0.137337		0.963917		0.198307		0.0113249	0.0122826					
o-Xylene			0.0901875	3.70266	3.70266	0.00540212		0.594197			4.29913		4.29913	0.00205542		0.00281186			0.153325		0.594565		0.103512		0.00497963	0.00540212					
n-Nonane			0.0181479	21.9537	21.9537	0.0141586		0.141811			22.1096		22.1096	0.00513634		0.00867894			0.000274073		0.141812		0.0753967		0.0131631	0.0141586					
n-Decane			0.00142673	2.98995	2.98995	0.00151651		0.0263490			3.01781		3.01781	0.000551805		0.000889672			0.000158344		0.0263490		0.0113678		0.00140746	0.00151651					
TEG			2.01134E-08	5.05810	5.05810	0.00570797		0.0337891			0		0	0.00208344		0.00160223			215.624		19.4871		2.79962		0.00526410	0.00570797					
Water			3.39305	50.9139	50.9139	1.14452		325.065			377.062		377.062	0.468847		0.506890			552.794		503.305		50.5601		1.04561	1.14452					
Methanol			0	0	0	0		0			0		0	0		0			0		0		0		0	0					

Process Streams		Blowdown	BTEX Emissions	Contactor OVHD	Dry Gas	Flash Gas	HC	Regen OVHD	Slop	TEG	Wet Gas Feed	1	2	3	4	5	11	12	13	14	15	16	18	20	22	23	24	25	26	27	28
Properties	Status:	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved
Phase: Vapor	From Block:	TEG Makeup	BTEX Condenser	T-600	Gas/Glycol HEX	Rich Flash	Rich Flash	Condenser	BTEX Condenser	--	T-600 Scrubber	L/R HEX	To Dehy	VLVE-100	T-600 Scrubber	VLVE-102	T-600	RCYL-1	Reboiler	Regenerator	Regenerator	Condenser	L/R HEX	Rich Flash	Reflux Coil	Gly/Gly XHGR B	Reboiler	Gly/Gly XHGR A	Gas/Glycol HEX	PUMP-100	TEG Makeup
	To Block:	--	BTEX to Flare	Gas/Glycol HEX	--	Flash to Flare	Flash Cond	BTEX Condenser	BTEX Slop	TEG Makeup	T-600	Gly/Gly XHGR A	T-600 Scrubber	L/R HEX	To Slug Catcher	Reflux Coil	VLVE-102	T-600	Regenerator	Reboiler	Condenser	Regenerator	Regenerator	VLVE-100	Gly/Gly XHGR B	Rich Flash	L/R HEX	TEG Makeup	RCYL-1	Gas/Glycol HEX	PUMP-100
Property	Units																														
Temperature	°F		120	121.319	124.474	146.857		212.072			119.886		120	146.772		124.796			385		292.859		290		146.720	146.857					
Pressure	psig		1.5	1140	1135	50		1.5			1143		1145	2		60			4.5		1.5		1.5		55	50					
Mole Fraction Vapor	%		100	100	100	100		100			100		100	100		100			100		100		100		100	100					
Mole Fraction Light Liquid	%		0	0	0	0		0			0		0	0		0			0		0		0		0	0					
Mole Fraction Heavy Liquid	%		0	0	0	0		0			0		0	0		0			0		0		0		0	0					
Phase Mole Fraction	%		100	100	100	100		100			100		100	0.555963		4.68882			100		100		3.25200		4.87249	4.93762					
Molecular Weight	lb/lbmol		51.0128	22.1914	22.1914	29.9684		22.3121			22.1941		22.1941	41.2476		29.1825			23.9683		21.4498		30.6747		29.7925	29.9684					
Mass Density	lb/ft^3		0.135049	5.13561	5.05403	0.303830		0.0505847			5.17886		5.18738	0.106799		0.356179			0.0511562		0.0433175		0.0621190		0.325895	0.303830					
Molar Flow	lbmol/h		1.79984	19260.7	19260.7	6.81977		20.0475			19287.5		19287.5	0.729971		6.47612			32.1420		30.0712		4.26984		6.72980	6.81977					
Mass Flow	lb/h		91.8148	427422	427422	204.378		447.301			428069		428069	30.1096		188.990			770.389		645.021		130.976		200.498	204.378					
Vapor Volumetric Flow	ft^3/h		679.864	83227.1	84570.5	672.671		8842.61			82657.0		82521.2	281.928		530.602			15059.5		14890.5		2108.47		615.221	672.671					
Liquid Volumetric Flow	gpm		84.7623	10376.4	10543.9	83.8655		1102.46			10305.3		10288.4	35.1494		66.1530			1877.55		1856.48		262.874		76.7029	83.8655					
Std Vapor Volumetric Flow	MMSCFD		0.0163922	175.419	175.419	0.0621118		0.182585			175.663		175.663	0.00664830		0.0589820			0.292737		0.273877		0.0388880		0.0612925	0.0621118					
Std Liquid Volumetric Flow	sgpm		0.283171	2344.00	2344.00	0.926771		1.00865			2345.93		2345.93	0.111423		0.874717			1.49118		1.39946		0.354363		0.913010	0.926771					
Compressibility			0.983447	0.800258	0.805281	0.980384		0.990973			0.797700		0.797608	0.990809		0.975727			0.992196		0.993068		0.994098		0.979086	0.980384					
Specific Gravity			1.76134	0.766213	0.766213	1.03473		0.770379			0.766305		0.766305	1.42417		1.00760			0.827563		0.740606		1.05912		1.02866	1.03473					
API Gravity																															
Enthalpy	Btu/h		-105737	-7.21993E+08	-7.21041E+08	-344940		-1.93918E+06			-7.24763E+08		-7.24763E+08	-49315.5		-321310			-3.52848E+06		-2.97302E+06		-371006		-338695	-344940					
Mass Enthalpy	Btu/lb		-1151.63	-1689.18	-1686.95	-1687.76		-4335.29			-1693.10		-1693.10	-1637.87		-1700.15			-4580.13		-4609.18		-2832.62		-1689.27	-1687.76					
Mass Cp	Btu/(lb*°F)		0.358581	0.649982	0.646273	0.441438		0.437664			0.651863		0.652132	0.398733		0.436771			0.476132		0.454495		0.452009		0.442714	0.441438					
Ideal Gas CpCv Ratio			1.12282	1.23052	1.22970	1.17985		1.25752			1.23091		1.23088	1.13813		1.18885			1.21226		1.25764		1.16790		1.18074	1.17985					
Dynamic Viscosity	cP		0.00980603	0.0142712	0.0142624	0.0116288		0.0127371			0.0142837		0.0142923	0.0109718		0.0113060			0.0158109		0.0142892		0.0141702		0.0116430	0.0116288					
Kinematic Viscosity	cSt		4.53296	0.173480	0.176171	2.38938		15.7193			0.172182		0.172001	6.41341		1.98162			19.2946		20.5931		14.2407		2.23032	2.38938					
Thermal Conductivity	Btu/(h*ft*°F)		0.0107271	0.0236792	0.0237259	0.0171882		0.0147751			0.0236629		0.0236770	0.0136589		0.0165825			0.0190621		0.0172511		0.0167929		0.0172538	0.0171882					
Surface Tension	lbf/ft																														
Net Ideal Gas Heating Value	Btu/ft^3		2122.57	1134.70	1134.70	1348.19		270.376			1133.88		1133.88	1681.16		1326.84			171.567		196.560		801.653		1343.01	1348.19					
Net Liquid Heating Value	Btu/lb		15615.6	19338.9	19338.9	16963.9		3788.96			19321.6		19321.6	15324.5		17151.0			1882.82		2615.37		9422.61		16999.6	16963.9					
Gross Ideal Gas Heating Value	Btu/ft^3		2284.00	1249.78	1249.78	1475.89		334.107			1248.91		1248.91	1828.80		1453.30			235.448		257.117		896.039		1470.40	1475.89					
Gross Liquid Heating Value	Btu/lb		16816.6	21307.2	21307.2	18581.4		4872.89			21288.9		21288.9	16683.3		18795.9			2894.22		3686.73		10590.4		18622.7	18581.4					

Process Streams		Blowdown	BTEX Emissions	Contactor OVHD	Dry Gas	Flash Gas	HC	Regen OVHD	Slop	TEG
Composition	Status:	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved
Phase: Nonspecific Liquid	From Block:	TEG Makeup	BTEX Condenser	T-600	Gas/Glycol HEX	Rich Flash	Rich Flash	Condenser	BTEX Condenser	--
	To Block:	--	BTEX to Flare	Gas/Glycol HEX	--	Flash to Flare	Flash Cond	BTEX Condenser	BTEX Slop	TEG Makeup
Mole Fraction									%	
H2S									0.0940795	
Nitrogen									1.32166E-05	
Methane									0.0248025	
CO2									0.151961	
Ethane									0.176269	
Propane									0.712066	
i-Butane									0.254345	
n-Butane									1.71193	
i-Pentane									1.38097	
n-Pentane									2.26955	
Neohexane									0.0270270	
Cyclopentane									2.21193	
2-Methylpentane									1.00511	
3-Methylpentane									0.804456	
n-Hexane									1.62696	
Methylcyclopentane									3.78849	
Benzene									29.0234	
Cyclohexane									6.09529	
2-Methylhexane									0.339087	
3-Methylhexane									0.687318	
1,1-Dimethylcyclopentane									2.58209	
n-Heptane									0.690490	
Methylcyclohexane									3.99918	
1,1,2-Trimethylcyclopentane									0.158241	
Toluene									31.7020	
2-Methylheptane									0.375173	
3-Methylheptane									0.0605970	
1,1-Dimethylcyclohexane									0.388772	
n-Octane									0.225337	
Ethylbenzene									1.54518	
m-Xylene									2.02697	
p-Xylene									1.98444	
o-Xylene									1.22015	
n-Nonane									0.248455	
n-Decane									0.0451358	
TEG									2.07967E-05	
Water									0.362715	
Methanol									0	
Molar Flow									lbmol/h	
H2S									0.000365101	
Nitrogen									5.12906E-08	
Methane									9.62528E-05	
CO2									0.000589726	
Ethane									0.000684061	
Propane									0.00276336	
i-Butane									0.000987056	
n-Butane									0.00664359	
i-Pentane									0.00535923	
n-Pentane									0.00880760	
Neohexane									0.000104885	
Cyclopentane									0.00858399	
2-Methylpentane									0.00390061	
3-Methylpentane									0.00312191	
n-Hexane									0.00631387	
Methylcyclopentane									0.0147023	
Benzene									0.112633	
Cyclohexane									0.0236544	
2-Methylhexane									0.00131592	
3-Methylhexane									0.00266732	
1,1-Dimethylcyclopentane									0.0100205	
n-Heptane									0.00267963	
Methylcyclohexane									0.0155199	
1,1,2-Trimethylcyclopentane									0.000614095	
Toluene									0.123028	
2-Methylheptane									0.00145596	
3-Methylheptane									0.000235163	
1,1-Dimethylcyclohexane									0.00150873	
n-Octane									0.000874483	
Ethylbenzene									0.00599648	
m-Xylene									0.00786620	
p-Xylene									0.00770116	
o-Xylene									0.00473514	
n-Nonane									0.000964199	
n-Decane									0.000175162	
TEG									8.07074E-08	
Water									0.00140761	
Methanol									0	
Mass Fraction									%	
H2S									0.0372069	
Nitrogen									4.29638E-06	
Methane									0.00461726	
CO2									0.0776062	
Ethane									0.0615055	
Propane									0.364362	
i-Butane									0.171547	
n-Butane									1.15463	
i-Pentane									1.15619	
n-Pentane									1.90014	
Neohexane									0.0270270	
Cyclopentane									1.80016	

Process Streams	Wet Gas Feed	1	2	3	4	5	11	12	13	14	15	16	18	20	22	23	24	25	26	27	28
Status:	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved
From Block:	T-600 Scrubber	L/R HEX	To Dehy	VLVE-100	T-600 Scrubber	VLVE-102	T-600	RCYL-1	Reboiler	Regenerator	Regenerator	Condenser	L/R HEX	Rich Flash	Reflux Coil	Gly/Gly XHGR B	Reboiler	Gly/Gly XHGR A	Gas/Glycol HEX	PUMP-100	TEG Makeup
To Block:	T-600	Gly/Gly XHGR A	T-600 Scrubber	L/R HEX	To Slug Catcher	Reflux Coil	VLVE-102	T-600	Regenerator	Reboiler	Condenser	Regenerator	Regenerator	VLVE-100	Gly/Gly XHGR B	Rich Flash	L/R HEX	TEG Makeup	RCYL-1	Gas/Glycol HEX	PUMP-100

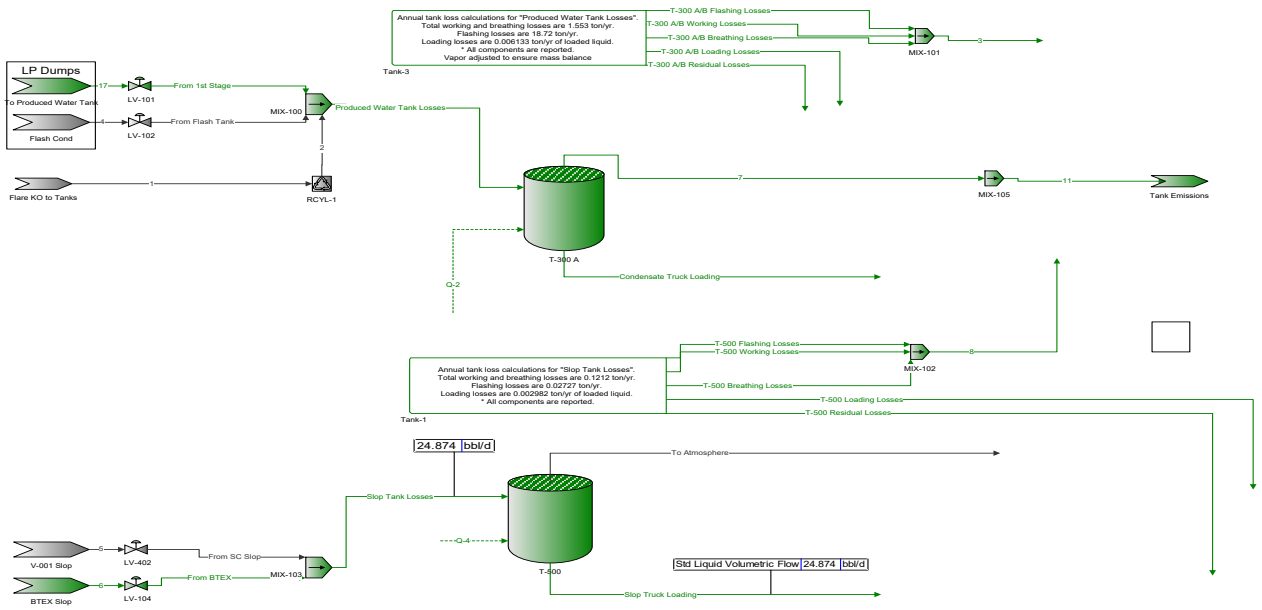
2-Methylpentane		1.00512
3-Methylpentane		0.804457
n-Hexane		1.62697
Methylcyclopentane		3.69988
Benzene		26.3077
Cyclohexane		5.95272
2-Methylhexane		0.394280
3-Methylhexane		0.756193
1,1-Dimethylcyclopentane		2.94197
n-Heptane		0.802881
Methylcyclohexane		4.55658
1,1,2-Trimethylcyclopentane		0.206052
Toluene		33.8958
2-Methylheptane		0.497306
3-Methylheptane		0.0803236
1,1-Dimethylcyclohexane		0.506237
n-Octane		0.298693
Ethylbenzene		1.90361
m-Xylene		2.49716
p-Xylene		2.44477
o-Xylene		1.50319
n-Nonane		0.369776
n-Decane		0.0745226
TEG		3.82414E-05
Water		0.0758271
Methanol		0
Mass Flow		**lb/h**
H2S		0.0124430
Nitrogen		1.43662E-06
Methane		0.00154413
CO2		0.0256535
Ethane		0.0205691
Propane		0.121852
i-Butane		0.0573699
n-Butane		0.386140
i-Pentane		0.386662
n-Pentane		0.635458
Neohexane		0.00903854
Cyclopentane		0.602020
2-Methylpentane		0.336137
3-Methylpentane		0.266002
n-Hexane		0.544100
Methylcyclopentane		1.23734
Benzene		8.79798
Cyclohexane		1.99074
2-Methylhexane		0.131858
3-Methylhexane		0.267271
1,1-Dimethylcyclopentane		0.983873
n-Heptane		0.268505
Methylcyclohexane		1.52384
1,1,2-Trimethylcyclopentane		0.0689093
Toluene		11.3356
2-Methylheptane		0.166312
3-Methylheptane		0.0268623
1,1-Dimethylcyclohexane		0.169299
n-Octane		0.0998909
Ethylbenzene		0.636617
m-Xylene		0.835115
p-Xylene		0.817594
o-Xylene		0.502706
n-Nonane		0.123663
n-Decane		0.0249223
TEG		1.21201E-05
Water		0.0253586
Methanol		0

Process Streams		Blowdown	BTEX Emissions	Contactor OVHD	Dry Gas	Flash Gas	HC	Regen OVHD	Slop	TEG	Wet Gas Feed	1	2	3	4	5	11	12	13	14	15	16	18	20	22	23	24	25	26	27	28
Properties	**Status:**																														
Phase: Nonaqueous Liquid	From Block:	TEG Makeup	BTEX Condenser	T-600	Gas/Glycol HEX	Rich Flash	Rich Flash	Condenser	BTEX Condenser	--	T-600 Scrubber	L/R HEX	To Dehy	VLVE-100	T-600 Scrubber	VLVE-102	T-600	RCYL-1	Reboler	Regenerator	Regenerator	Condenser	L/R HEX	Rich Flash	Reflux Coil	Gly/Gly XHGR A	Reboler	Gly/Gly XHGR A	Gas/Glycol HEX	PUMP-100	TEG Makeup
	To Block:	--	BTEX to Flare	Gas/Glycol HEX	--	Flash to Flare	Flash Cond	BTEX Condenser	BTEX Slop	TEG Makeup	T-600	Gly/Gly XHGR A	T-600 Scrubber	L/R HEX	To Slug Catcher	Reflux Coil	VLVE-102	T-600	Regenerator	Reboler	Condenser	Regenerator	L/R HEX	VLVE-100	Gly/Gly XHGR B	Rich Flash	L/R HEX	TEG Makeup	RCYL-1	Gas/Glycol HEX	PUMP-100
Property	**Units**																														
Temperature	°F								120																						
Pressure	psia								1.5																						
Mole Fraction Vapor	%								0																						
Mole Fraction Light Liquid	%								100																						
Mole Fraction Heavy Liquid	%								0																						
Phase Mole Fraction	%								2.12673																						
Molecular Weight	lb/lbmol								86.1752																						
Mass Density	lb/ft^3								49.4266																						
Molar Flow	lbmol/h								0.388077																						
Mass Flow	lb/h								33.4426																						
Vapor Volumetric Flow	ft^3/h								0.676612																						
Liquid Volumetric Flow	gpm								0.0843568																						
Std Vapor Volumetric Flow	MMSCFD								0.00353446																						
Std Liquid Volumetric Flow	sucm								0.0815784																						
Compressibility									0.00453924																						
Specific Gravity									0.792490																						
API Gravity									46.1565																						
Enthalpy	Btu/h								-5821.90																						
Mass Enthalpy	Btu/lb								-174.086																						
Mass Cp	Btu/(lb-°F)								0.439500																						
Ideal Gas CpCv Ratio									1.07928																						
Dynamic Viscosity	cP								0.462944																						
Kinematic Viscosity	cSt								0.508936																						
Thermal Conductivity	Btu/(h*ft*-F)								0.0705342																						
Surface Tension	lb/ft								0.00152986?																						
Net Ideal Gas Heating Value	Btu/ft^3								4983.56																						
Net Liquid Heating Value	Btu/lb								17826.9																						
Gross Ideal Gas Heating Value	Btu/ft^3								4310.62																						
Gross Liquid Heating Value	Btu/lb								18826.3																						

Process Streams		Blowdown	BTEX Emissions	Contactor OVHD	Dry Gas	Flash Gas	HC	Regen OVHD	Slop	TEG	Wet Gas Feed	1	2	3	4	5	11	12	13	14	15	16	18	20	22	23	24	25	26	27	28
Composition	**Status:**																														
Phase: Aqueous Liquid	From Block:	TEG Makeup	BTEX Condenser	T-600	Gas/Glycol HEX	Rich Flash	Rich Flash	Condenser	BTEX Condenser	--	T-600 Scrubber	L/R HEX	To Dehy	VLVE-100	T-600 Scrubber	VLVE-102	T-600	RCYL-1	Reboler	Regenerator	Regenerator	Condenser	L/R HEX	Rich Flash	Reflux Coil	Gly/Gly XHGR B	Reboler	Gly/Gly XHGR A	Gas/Glycol HEX	PUMP-100	TEG Makeup
	To Block:	--	BTEX to Flare	Gas/Glycol HEX	--	Flash to Flare	Flash Cond	BTEX Condenser	BTEX Slop	TEG Makeup	T-600	Gly/Gly XHGR A	T-600 Scrubber	L/R HEX	To Slug Catcher	Reflux Coil	VLVE-102	T-600	Regenerator	Reboler	Condenser	Regenerator	L/R HEX	VLVE-100	Gly/Gly XHGR B	Rich Flash	L/R HEX	TEG Makeup	RCYL-1	Gas/Glycol HEX	PUMP-100
Mole Fraction																															
H2S									0.00286412	0		1.28126E-07	0.0280011		0.0386009	0.0514998	1.36655E-07		3.49088E-06	0.000215028	0.00825615	0.0343963	0.0354582	0.0343963	1.28126E-07	1.28126E-07	1.28087E-07	1.28087E-07	1.28087E-07
Nitrogen									1.60917E-07	0		5.63496E-16	5.25132E-06		0.000233502	0.0184239	0		3.18886E-13	1.70365E-08	1.47443E-06	0.000207964	0.000229582	0.000207964	5.63498E-16	5.63498E-16	0	0	0
Methane									0.00018036	0		9.66033E-12	0.00026470		0.122819	2.46098	0		2.52906E-09	1.74563E-05	0.00185695	0.102437	0.111438	0.102437	9.66033E-12	9.66033E-12	0	0	0
CO2									0.00505125	0		4.82758E-09	0.0935888		0.248361	0.695014	0		3.95481E-07	0.000362001	0.0150515	0.197103	0.209928	0.197103	4.82758E-09	4.82758E-09	0	0	0
Ethane									0.00024852?	0		2.58843E-09	0.0328351		0.160110	0.983187	0		3.88716E-08	2.45397E-05	0.00541628	0.127749	0.137762	0.127749	3.00472E-10	3.00472E-10	0	0	0
Propane									0.00023342?	0		2.58843E-09	0.0701435		0.219638	0.786957	0		2.22289E-07	2.80017E-05	0.0118011	0.175169	0.187260	0.175169	2.58843E-09	2.58843E-09	0	0	0
i-Butane									2.26352E-05	0		1.18397E-09	0.0149427		0.0389262	0.111444	0		8.05564E-08	2.53539E-06	0.00265318	0.0312674	0.0332413	0.0312674	1.18397E-09	1.18397E-09	0	0	0
n-Butane									0.00018636?	0		1.39881E-08	0.0792193		0.168926	0.375936	0		7.87290E-07	2.39329E-05	0.0148119	0.137807	0.145461	0.137807	1.39881E-08	1.39881E-08	0	0	0
i-Pentane									3.09122E-05	0		1.71707E-08	0.0309217		0.0539228	0.0942116	1.82544E-08		7.07164E-07	4.56588E-06	0.00662574	0.0452437	0.0472874	0.0452437	1.71707E-08	1.71654E-08	1.71654E-08	1.71654E-08	1.71654E-08
n-Pentane									3.52922E-05	0		3.52922E-08	0.0424692		0.0694984	0.112991	3.7559E-08		1.33092E-06	5.83438E-06	0.00957373	0.0589510	0.0613890	0.0589510	3.52922E-08	3.52812E-08	3.52812E-08	3.52812E-08	3.52812E-08
Neohexane									1.18924E-07	0		2.01025E-09	0.000393236		0.000577846	0.000882609	0		4.40158E-08	2.19498E-08	0.000120860	0.000510658	0.000528785	0.000510658	2.01025E-09	2.01025E-09	0	0	0
Cyclopentane									0.00015719?	0		1.26468E-06	0.0318413		0.0372155	0.0472189	1.37076E-06		1.88922E-05	1.32618E-05	0.0128862	0.0347650	0.0353086	0.0347650	1.26480E-06	1.26480E-06	1.26441E-06	1.26441E-06	1.26441E-06
2-Methylpentane									1.10110E-07	0		1.10110E-07	0.0116937		0.0160817	0.0220973	1.19340E-07		2.17293E-06	1.41422E-06	0.00388881	0.0144207	0.0148602	0.0144207	1.10110E-07	1.10076E-07	1.10076E-07	1.10076E-07	1.10076E-07
3-Methylpentane									8.48565E-08	0		1.37435E-07	0.0087748		0.0115180	0.0149028	1.48629E-07		2.42735E-06	1.77427E-06	0.00312045	0.0104414	0.0107190	0.0104414	1.37435E-07	1.37435E-07	1.37395E-07	1.37395E-07	1.37395E-07
n-Hexane									3.65563E-06	0		2.25279E-07	0.0156680		0.0205511	0.0264593	2.44507E-07		4.00909E-06	1.27728E-06	0.00550502	0.0186030	0.0190931	0.0186030	2.25279E-07	2.25279E-07	2.25209E-07	2.25209E-07	2.25209E-07
Methylcyclopentane									4.86330E-05	0		1.80640E-06	0.0368274		0.0419099	0.0449943	1.95774E-06		2.66742E-05	9.58097E-06	0.0153428	0.0394805	0.0399864	0.0394805	1.80640E-06	1.80640E-06	1.80583E-06	1.80583E-06	1.80583E-06
Benzene									0.01156001	0		0.00059321	0.220179		0.224939	0.218792	0.000643554		0.00048571	0.00165478	0.148604	0.222078	0.222258	0.222078	0.00059321	0.00059321	0.00059373	0.00059373	0.00059373
Cyclohexane									0.00011722?	0		4.79844E-06	0.0476362		0.0533224	0.0566574	5.21168E-06		5.89824E-05	2.06040E-05	0.0219028	0.0506217	0.0511984	0.0506217	4.79844E-06	4.79844E-06	4.79694E-06	4.79694E-06	4.79694E-06
2-Methylhexane									3.24592E-07	0		1.64307E-08	0.0021224		0.0026787?	0.0031961?	1.76831E-08		3.61233E-07	8.55598E-08	0.000668060	0.0024812	0.0024793	0.0024812	1.64307E-08	1.64307E-08	1.64255E-08	1.64255E-08	1.64255E-08
3-Methylhexane									6.43735E-07	0		4.66404E-08	0.0040588		0.00500293	0.00575011	5.03074E-08		9.36525E-07	1.63610E-07	0.00136851	0.00457957	0.00466612	0.00457957	4.66404E-08	4.66404E-08	4.66258E-08	4.66258E-08	4.66258E-08
1,1-Dimethylcyclopentane									1.25013573?	0		1.34387E-06	0.0166572		0.0184237	0.0192127	1.46149E-06		1.76541E-05	2.20207E-06	0.00748274	0.0175446	0.0177190	0.0175446	1.34387E-06	1.34387E-06	1.34345E-06	1.34345E-06	1.34345E-06
n-Heptane									3.36574E-07	0		5.52081E-08	0.0036534?		0.0043925?	0.0049733?	5.95780E-08		1.06121E-06	1.71474E-07	0.00127278	0.00404491	0.00411574	0.00404491	5.52081E-08	5.52081E-08	5.51908E-08	5.51908E-08	5.51908E-08
Methylcyclohexane									1.67151E-05	0		3.17184E-06	0.0214916		0.0236028	0.0245318	3.44995E-06		3.61144E-05	5.09237E-06	0.0103986	0.0225627	0.0227740	0.0225627	3.17184E-06	3.17184E-06	3.17085E-06	3.17085E-06	3.17085E-06
1,1,2-Trimethylcyclopentane									3.50841E-07	0		1.63206E-07	0.0007013?		0.0007693?	0.0008083?	1.78544E-07		1.63922E-06	4.57081E-08	0.000580434	0.0007387?	0.0007439?	0.0007387?	1.63206E-07	1.63206E-07	1.63156E-07	1.63156E-07	1.63156E-07
Toluene									0.00450884	0		0.00173022	0.145381		0.148596	0.141224	0.00187054		0.00885734	0.00102432	0.111083	0.145880	0.145808	0.145880	0.00173022	0.00173022	0.00172968	0.00172968	0.00172968
2-Methylheptane									7.35534E-08	0		4.18508E-08	0.0015331?		0.0017717?	0.0019244?	4.52414E-08		7.17525E-07	6.04761E-08	0.000583995	0.0016515	0.0016779	0.0016515	4.18508E-08	4.18508E-08	4.18378E-08	4.18378E-08	4.18378E-08
3-Methylheptane									8.80455E-09	0		9.70480E-09	0.000243391		0.000279615	0.000295825	0		1.53397E-07	1.03337E-08	9.81198E-05	0.000260197	0.000263390	0.000260197	9.70480E-09	9.70480E-09	0	0	0
1,1-Dimethylcyclohexane									1.40870E-07	0		3.33947E-07	0.0015693		0.0017148	0.0017681?	3.64602E-07		3.40833E-06	1.19073E-07	0.000758429	0.0016457?	0.0016698	0.0016457?	3.33947E-07	3.33947E-07	3.33843E-07	3.33843E-07	3.33843E-07
n-Octane									1.93531E-08	0		4.21064E-08	0.000846251		0.000949480	0.00100284	4.56749E-08		6.36585E-07	2.88906E-08	0.000353163	0.000897722	0.000907631	0.000897722	4.21064E-08	4.21064E-08	4.20932E-08	4.20932E-08	4.20932E-08
m-Xylene									5.24304E-05	0		0.00022574?	0.00552200		0.00553246	0.00553619	0.00042291?		0.00088684	2.86365E-05	0.00458210	0.00551625	0.00551758	0.00551625	0.00022574?	0.00022574?	0.00022573	0.00022573	0.00022573
m-Xylene									5.61656E-05	0		0.00031750?	0.00737133		0.00738268	0.00738268	0.00034146?		0.00124880	3.79326E-05	0.00609378	0.00733525	0.00733899	0.00733525	0.00031750?	0.00031750?	0.00031740	0.00031740	0.00031740
p-Xylene									5.93439E-05	0		0.00027894?	0.00715485		0.00717078	0.00687940	0.00030016?		0.00111857	3.70838E-05	0.00591843	0.00714861	0.00715058	0.00714861	0.00027894?	0.00027894?	0.00027885?	0.00027885?	0.00027885?
o-Xylene									6.87733E-05	0		0.00035871?	0.00459613		0.00459189	0.00436576	0.00019407?		0.00130254	3.45528E-05	0.00397190	0.00458533	0.00458521	0.00458533	0.00035871?	0.00035871?	0.00035595	0.00035595	0.00035595
n-Nonane									5.40092E-09	0		1.40304E-07	0.000816280		0.000872500	0.000880584	1.53263E-07		1.59912E-06	1.02580E-08	0.000407730	0.000842243	0.000847574	0.000842243	1.40304E-07	1.40304E-07	1.40260E-07	1.40260E-07	1.40260E-07
n-Decane									1.30292E-10	0		1.01649E-07	0.000138949		0.000144109	0.000141879	1.11530E-07		8.54074E-07	9.32395E-10	8.29778E-05	0.000141130	0.000141617	0.000141130	1.01649E-07	1.01649E-07	1.01617E-07	1.01617E-07	1.01617E-07
TEG									0.00125938	99.9		89.1370	75.9494		75.3300	71.7980	89.1373		70.1580	1.29232	78.0512	75.5272	75.4755	75.5272	89.1370	89.1370	89.1403	89.1403	89.1403
Water									99.9695	0.1		10.8595	23.0523		22.9110	21.8571	10.8589		29.8243	98.7041	21.5059	22.9440	22.9325	22.9440	10.8595	10.8595	10.8561	10.8561	10.8561
Methanol									0	0		0	0		0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0
Mass Flow									**lb/h**																						
H2S									0.000475800	0		1.42542E-07	0.0365607		0.0508151	0.0711263	1.52081E-07		5.00565E-06	2.15538E-05	0.0104877	0.0451619	0.0465880	0.0451619	1.42542E-07	1.42542E-07	1.42542E-07	1.42542E-07	1.42542E-07
Nitrogen									2.87390E-08	0		6.26899E-16	6.85658E-06		0.000307387	0.0225468	0		4.57261E-13	1.79788E-09	1.87302E-06	0.000273054	0.000298229	0.000273054	6.26899E-16	6.26899E-16	0	0	0
Methane									2.86292E-05	0		1.07472E-11	0.0120968		0.161682	3.00904	0		3.62659E-09	1.74976E-06	0.00237156	0.134438	0.146416	0.134438	1.07472E-11	1.07472E-11	0	0	0
CO2									0.00090213?	0		5.37074E-09	0.122198		0.326948	0.959943	0		5.67093E-07	3.62866E-05	0.0191197	0.258794	0.275821	0.258794	5.37074E-09	5.37074E-09	0	0	0
Ethane									4.43861E-05	0		3.34279E-10	0.0428724		0.210773	1.35796	0		5.57392E-08	2.45949E-06	0.00688024	0.167732	0.181004	0.167732	3.34279E-10	3.34279E-10	0	0	0
Propane									4.16876E-05	0		2.87965E-09	0.0915854		0.289137	1.08933	0		3.18747E-07	2.80682E-06	0.0149068	0.229694	0.246038	0.229694	2.87965E-09	2.87965E-09	0	0	0
i-Butane									4.07880E-06	0		1.31718E-09	0.0195104		0.0512434	0.153925	0		1.15512E-07	2.54140E-07	0.00337030	0.0410537	0.0436752	0.0410537	1.31718E-09	1.31718E-09	0	0	0
n-Butane									2.97113E-05	0		1.55618E-08	0.103436		0.222379	0.519237	0		1.12892E-06	2.39897E-06	0.0188153	0.180938	0.191119	0.180938	1.55618E-08	1.55618E-08	0	0	0
i-Pentane									5.52078E-06	0		1.91626E-08	0.0403741		0.0709852	0.130124	2.03151E-08		1.01402E-06	4.57669E-07	0.00841860	0.0594044	0.0621303	0.0594044	1.91626E-08	1.91026E-08	1.91026E-08	1.91026E-08	1.91026E-08
n-Pentane									3.98609E-06	0		3.92635E-08	0.0594515		0.0914894	0.154818	4.17994E-08		1.90845E-06	5.84822E-07	0.0121814	0.0774019	0.0806582	0.0774019	3.92635E-08	3.92635E-08	3.92635E-08	3.92635E-08	3.92635E-08
Neohexane									2.12394E-06	0		2.29943E-09	0.000551444		0.000760890	0.00119142	0		6.31156E-08	2.20019E-09	0.000153527	0.000870487	0.000894763	0.000870487	2.23643E-09	2.23643E-09	0	0	0
Cyclopentane									1.91416E-05	0		1.40711E-06	0.0415748		0.0489913	0.0569310	1.52551E-06		2.76902E-05	1.32932E-06	0.0163437	0.0456460	0.0463915	0.0456460	1.40711E-06	1.40711E-06	1.40711E-06	1.40711E-06	1.40711E-06
2-Methylpentane									9.93358E-07	0		1.22495E-07	0.0152883		0.0211703	0.0305204	1.32812E-07		3.11583E-06	1.41798E-07	0.00493738	0.0185342	0.0195246	0.0185342	1.22495E-07	1.22495E-07	1.22495E-07	1.22495E-07	1.22495E-07
3-Methylpentane									1.51550E-06	0		1.52902E-07	0.0114608		0.0151626	0.0205698	1.65631E-07		3.48068E-06	1.77848E-07	0.00396387	0.0137094	0.0140836	0.0137094	1.52902E-07	1.52902E-07	1.52902E-07	1.52902E-07	1.52902E-07
n-Hexane									6.52878E-07	0		2.50626E-07	0.0204575		0.0270540	0.0395452	2.72109E-07		5.74976E-06	1.28031E-07	0.00699296	0.0244255	0.0250881	0.0244255	2.50626E-07	2.50626E-07	2.50626E-07	2.50626E-07	2.50626E-07
Methylcyclopentane									8.68563E-06	0		2.00964E-06	0.0480851		0.0551711	0.0621454	2.17875E-06		3.82489E-05	9.60370E-07	0.0194898	0.0518373	0.0525375	0.0518373	2.00964E-06	2.00964E-06	2.00964E-06	2.00964E-06	2.00964E-06
Benzene									0.00278611	0		0.00066074?	0.267485		0.286115	0.302192	0.000721604		0.00582595	0.000165870	0.188770	0.291586	0.292416	0.291586	0.00066074?	0.00066074?	0.00066074?	0.00066074?	0.00066074?
Cyclohexane									2.09366E-05	0		5.33832E-06	0.0621979		0.0701949	0.0781163	5.80002E-06		8.45768E-05	2.06529E-06	0.0276229	0.0664656	0.0672688	0.0664656	5.33832E-06	5.33832E-06	5.33832E-06	5.33832E-06	5.33832E-06

2-Methylhexane								5.79706E-08	0		1.82793E-08		0.00277098		0.00352631	0.00441448	1.96793E-08		5.17983E-07		8.57538E-09	0.000848629	0.00318547	0.00325717	0.00318547	1.82793E-08	1.82793E-08	1.82793E-08	1.82793E-08	1.82793E-08
3-Methylhexane								1.14968E-07	0		5.18880E-08		0.00534794		0.00658598	0.00794196	5.59866E-08		1.34291E-06		1.63998E-08	0.00173840	0.00601292	0.00613076	0.00601292	5.18880E-08	5.18880E-08	5.18880E-08	5.18880E-08	5.18880E-08
1,1-Dimethylcyclopentane								2.23264E-06	0		1.49507E-06		0.0217492		0.0242534	0.0265363	1.62647E-06		2.53148E-05		2.20730E-07	0.00950524	0.0230358	0.0232807	0.0230358	1.49507E-06	1.49507E-06	1.49507E-06	1.49507E-06	1.49507E-06
n-Heptane								6.01106E-08	0		6.14196E-08		0.00477024		0.00578247	0.00686913	6.63037E-08		1.52170E-06		1.71881E-08	0.00161680	0.00531091	0.00540762	0.00531091	6.14196E-08	6.14196E-08	6.14196E-08	6.14196E-08	6.14196E-08
Methylcyclohexane								2.98523E-06	0		3.52871E-06		0.0280613		0.0310713	0.0338829	3.83941E-06		5.17855E-05		5.10445E-07	0.0132092	0.0296246	0.0299225	0.0296246	3.52871E-06	3.52871E-06	3.52871E-06	3.52871E-06	3.52871E-06
1,1,2-Trimethylcyclopentane								6.26586E-09	0		1.81569E-07		0.000914159		0.00101300	0.00111367	1.98700E-07		2.33619E-06		4.58145E-09	0.000457856	0.000967369	0.000977426	0.000967369	1.81569E-07	1.81569E-07	1.81569E-07	1.81569E-07	1.81569E-07
Toluene								0.000804901	0		0.00192489		0.189822		0.192983	0.195057	0.00208171		0.0127008		0.000102675	0.141108	0.191276	0.191573	0.191276	0.00192489	0.00192489	0.00192489	0.00192489	0.00192489
2-Methylheptane								1.31363E-08	0		4.65596E-08		0.00200176		0.00233235	0.00265868	5.03487E-08		1.02888E-06		6.06196E-09	0.000741843	0.00217319	0.00220468	0.00217319	4.65596E-08	4.65596E-08	4.65596E-08	4.65596E-08	4.65596E-08
3-Methylheptane								1.57245E-09	0		1.07967E-08		0.000317792		0.000364142	0.000408588	0		2.19961E-07		1.03582E-09	0.000124640	0.000341635	0.000346065	0.000341635	1.07967E-08	1.07967E-08	0	0	0
1,1-Dimethylcyclohexane								2.51598E-08	0		3.71520E-07		0.00204866		0.00226225	0.00246969	4.05761E-07		4.88803E-06		1.20257E-08	0.00101169	0.00216088	0.00218218	0.00216088	3.71520E-07	3.71520E-07	3.71520E-07	3.71520E-07	3.71520E-07
n-Octane								3.45637E-09	0		4.68439E-08		0.00110494		0.00124992	0.00138483	5.08307E-08		9.13393E-07		2.89591E-09	0.000448619	0.00117870	0.00119252	0.00117870	4.68439E-08	4.68439E-08	4.68439E-08	4.68439E-08	4.68439E-08
Ethylbenzene								9.36384E-06	0		0.000251142		0.00721000		0.00728305	0.00732883	0.000270338		0.00127575		2.87044E-06	0.00582059	0.00724276	0.00724948	0.00724276	0.000251142	0.000251142	0.000251142	0.000251142	0.000251142
m-Xylene								1.00115E-05	0		0.000353230		0.00955414		0.00964805	0.00970681	0.000380009		0.00179070		3.80226E-06	0.00774086	0.00959622	0.00960484	0.00959622	0.000353230	0.000353230	0.000353230	0.000353230	0.000353230
p-Xylene								1.05985E-05	0		0.000310329		0.00934199		0.00943978	0.00950173	0.000334050		0.00160395		3.71718E-06	0.00751812	0.00938603	0.00939505	0.00938603	0.000310329	0.000310329	0.000310329	0.000310329	0.000310329
o-Xylene								1.22826E-05	0		0.000423549		0.00600111		0.00604487	0.00607136	0.000452970		0.00186776		3.46348E-06	0.00504546	0.00602047	0.00602445	0.00602047	0.000423549	0.000423549	0.000423549	0.000423549	0.000423549
n-Nonane								9.64580E-10	0		1.56090E-07		0.00106581		0.00114858	0.00121625	1.70565E-07		2.29302E-06		1.02823E-09	0.000517990	0.00110585	0.00111362	0.00110585	1.56090E-07	1.56090E-07	1.56090E-07	1.56090E-07	1.56090E-07
n-Decane								2.32642E-11	0		1.13086E-07		0.000181424		0.000189708	0.000195961	1.24121E-07		1.22597E-06		9.34607E-11	0.000105406	0.000185302	0.000186069	0.000185302	1.13086E-07	1.13086E-07	1.13086E-07	1.13086E-07	1.13086E-07
TEG								0.000224920	0.0346570		99.1660		99.1662		99.1662	99.1662	99.1999		100.602		0.129539	99.1475	99.1662	99.1662	99.1662	99.1660	99.1660	99.2006	99.2006	99.2006
Water								17.8541	3.46917E-05		12.0813		30.0991		30.1606	30.1887	12.0847		42.7661		9.89383	27.3187	30.1252	30.1307	30.1252	12.0813	12.0813	12.0814	12.0814	12.0814
Methanol								0	0		0		0		0	0	0		0		0	0	0	0	0	0	0	0	0	0
Mass Fraction								%	%		%		%		%	%	%		%		%	%	%	%	%	%	%	%	%	%
H2S								0.00503525	0		3.21505E-08		0.00802473		0.0111209	0.0153793	3.42903E-08		1.07427E-06		0.000371521	0.00231700	0.00989344	0.0102033	0.00989344	3.21505E-08	3.21505E-08	3.21394E-08	3.21394E-08	3.21394E-08
Nitrogen								2.49990E-07	0		1.16224E-16		1.23703E-06		5.52950E-05	0.00452266	0		8.06616E-14		2.54727E-08	3.40129E-07	4.91675E-05	5.36872E-05	4.91675E-05	1.16224E-16	1.16224E-16	0	0	0
Methane								0.000142615	0		1.14104E-12		0.00124982		0.0166559	0.345958	0		3.66350E-10		1.41972E-05	0.000246627	0.0138692	0.0150944	0.0138692	1.14104E-12	1.14104E-12	0	0	0
CO2								0.0123282	0		1.56428E-09		0.0346350		0.0923974	0.268032	0		1.57158E-07		0.000807669	0.00545461	0.0732089	0.0780064	0.0732089	1.56428E-09	1.56428E-09	0	0	0
Ethane								0.000414431	0		6.65215E-11		0.00830238		0.0406976	0.259062	0		1.05540E-08		3.74036E-05	0.00134109	0.0324190	0.0349755	0.0324190	6.65215E-11	6.65215E-11	0	0	0
Propane								0.000570808	0		8.40371E-10		0.0260092		0.0818716	0.304084	0		8.85071E-08		6.25976E-05	0.00428506	0.0651892	0.0697195	0.0651892	8.40371E-10	8.40371E-10	0	0	0
i-Butane								7.36139E-05	0		5.06666E-10		0.00730322		0.0191256	0.0567607	0		4.22774E-08		7.47075E-06	0.00126983	0.0153376	0.0163130	0.0153376	5.06666E-10	5.06666E-10	0	0	0
n-Butane								0.000536228	0		5.98602E-09		0.0387184		0.0829984	0.191471	0		4.13183E-07		7.05205E-05	0.00708908	0.0675984	0.0713842	0.0675984	5.98602E-09	5.98602E-09	0	0	0
i-Pentane								0.000123684	0		9.12129E-09		0.0187602		0.0328875	0.0595636	9.69688E-09		4.60696E-07		1.67005E-05	0.00393642	0.0275493	0.0288063	0.0275493	9.12129E-09	9.12129E-09	9.11815E-09	9.11815E-09	9.11815E-09
n-Pentane								8.91675E-05	0		1.87476E-08		0.0257660		0.0423871	0.0708674	1.99519E-08		8.67053E-07		2.13403E-05	0.00568785	0.0358959	0.0373967	0.0358959	1.87476E-08	1.87476E-08	1.87412E-08	1.87412E-08	1.87412E-08
Neohexane								5.68342E-07	0		1.27547E-09		0.000284958		0.000420945	0.000651395	0		3.42497E-08		9.58940E-08	8.57637E-05	0.000371396	0.000384747	0.000371396	1.27547E-09	1.27547E-09	0	0	0
Cyclopentane								0.000416856	0		6.53105E-07		0.0187784		0.0220636	0.0253318	7.07817E-07		1.19639E-05		4.71521E-05	0.00743034	0.0205773	0.0209082	0.0205773	6.53105E-07	6.53105E-07	6.52880E-07	6.52880E-07	6.52880E-07
2-Methylpentane								2.65812E-05	0		6.98631E-08		0.00847381		0.0117151	0.0166867	7.57189E-08		1.69081E-06		6.17843E-06	0.00275813	0.0104880	0.0108124	0.0104880	6.98631E-08	6.98631E-08	6.98390E-08	6.98390E-08	6.98390E-08
3-Methylpentane								4.05531E-05	0		8.72025E-08		0.00636059		0.00839058	0.0112463	9.44296E-08		1.88879E-06		7.75139E-06	0.00221431	0.00759392	0.00779921	0.00759392	8.72025E-08	8.72025E-08	8.71724E-08	8.71724E-08	8.71724E-08
n-Hexane								1.74703E-05	0		1.42936E-07		0.0113538		0.0149709	0.0199806	1.55135E-07		3.11957E-06		5.58017E-06	0.00390643	0.0135298	0.0138922	0.0135298	1.42936E-07	1.42936E-07	1.42887E-07	1.42887E-07	1.42887E-07
Methylcyclopentane								0.000226981	0		1.11932E-06		0.0260627		0.0298160	0.0331824	1.21309E-06		2.02703E-05		4.08780E-05	0.0106328	0.0280420	0.0284137	0.0280420	1.11932E-06	1.11932E-06	1.11893E-06	1.11893E-06	1.11893E-06
Benzene								0.0675774	0		0.000341573		0.144623		0.148529	0.149760	0.000370116		0.00286760		0.00655290	0.0955841	0.146402	0.146782	0.146402	0.000341573	0.000341573	0.000341456	0.000341456	0.000341456
Cyclohexane								0.000547120	0		2.97332E-06		0.0337120		0.0379353	0.0417100	3.22937E-06		4.48220E-05		8.79087E-05	0.0151789	0.0359554	0.0363808	0.0359554	2.97332E-06	2.97332E-06	2.97229E-06	2.97229E-06	2.97229E-06
2-Methylhexane								1.80372E-06	0		1.21219E-08		0.00178820		0.00226898	0.00280641	1.30458E-08		3.26835E-07		4.34588E-07	0.000551226	0.00205170	0.00209736	0.00205170	1.21219E-08	1.21219E-08	1.21177E-08	1.21177E-08	1.21177E-08
3-Methylhexane								3.57717E-06	0		3.44093E-08		0.00345118		0.00423771	0.00504893	3.71146E-08		8.47346E-07		8.31118E-07	0.00112918	0.00387280	0.00394772	0.00387280	3.44093E-08	3.44093E-08	3.43975E-08	3.43975E-08	3.43975E-08
1,1-Dimethylcyclopentane								6.80697E-05	0		9.71503E-07		0.0137530		0.0152918	0.0165305	1.05653E-06		1.56517E-05		1.09612E-05	0.00604990	0.0145384	0.0146893	0.0145384	9.71503E-07	9.71503E-07	9.71168E-07	9.71168E-07	9.71168E-07
n-Heptane								1.87030E-06	0		4.07302E-08		0.00307837		0.00372070	0.00436690	4.39540E-08		9.60158E-07		8.71066E-07	0.00105019	0.00342065	0.00348207	0.00342065	4.07302E-08	4.07302E-08	4.07162E-08	4.07162E-08	4.07162E-08
Methylcyclohexane								9.10151E-05	0		2.29297E-06		0.0177445		0.0195904	0.0211070	2.49402E-06		3.20181E-05		2.53482E-05	0.00840740	0.0186967	0.0188801	0.0186967	2.29297E-06	2.29297E-06	2.29218E-06	2.29218E-06	2.29218E-06
1,1,2-Trimethylcyclopentane								2.18327E-07	0		1.34840E-07		0.000660646		0.000729937	0.000792853	1.47511E-07		1.65077E-06		2.60012E-07	0.000333047	0.000697747	0.000704825	0.000697747	1.34840E-07	1.34840E-07	1.34793E-07	1.34793E-07	1.34793E-07
Toluene								0.0230287	0		0.00117376		0.112640		0.114181	0.114024	0.00126895		0.00736902		0.00478468	0.0842804	0.113283	0.113431	0.113283	0.00117376	0.00117376	0.00117336	0.00117336	0.00117336
2-Methylheptane								4.65943E-07	0		3.51979E-08		0.00147262		0.00171081	0.00192680	3.80494E-08		7.40078E-07		3.50216E-07	0.000549316	0.00159565	0.00161836	0.00159565	3.51979E-08	3.51979E-08	3.51858E-08	3.51858E-08	3.51858E-08
3-Methylheptane								5.57748E-08	0		8.16206E-09		0.000233788		0.000267104	0.000296112	0		1.58218E-07		5.98422E-08	9.22931E-05	0.000250842	0.000254032	0.000250842	8.16206E-09	8.16206E-09	0	0	0
1,1-Dimethylcyclohexane								8.76668E-07	0		2.75904E-07		0.00148053		0.00163011	0.00175825	3.01229E-07		3.45393E-06		6.82498E-07	0.000735913	0.00155861	0.00157358	0.00155861	2.75904E-07	2.75904E-07	2.75809E-07	2.75809E-07	2.75809E-07
n-Octane								1.22597E-07	0		3.54128E-08		0.000812865		0.000916833	0.00100361	3.84136E-08		6.57006E-07		1.67305E-07	0.000332191	0.000865447	0.000875381	0.000865447	3.54128E-08	3.54128E-08	3.54006E-08	3.54006E-08	3.54006E-08
Ethylbenzene								0.000308689	0		0.000176455		0.00492972		0.00496512	0.00493642	0.000189878		0.000852870		0.000154127	0.00400575	0.00494253	0.00494588	0.00494253	0.000176455	0.000176455	0.000176395	0.000176395	0.000176395
m-Xylene								0.000330038	0		0.000248183		0.00653248		0.00657742	0.00653813	0.000266907		0.00119713		0.000204160	0.00532729	0.00654855	0.00655281	0.00654855	0.000248183	0.000248183	0.000248098	0.000248098	0.000248098
p-Xylene								0.000349392	0		0.000218040		0.00638743		0.00643544	0.00639999	0.000234627		0.00107228		0.000199592	0.00517400	0.00640512	0.00640968	0.00640512	0.000218040	0.000218040	0.000217965	0.000217965	0.000217965
o-Xylene								0.000404909	0		0.000297590		0.00410316		0.00412100	0.00408943	0.000318153		0.00124865		0.000185970	0.00347231	0.00410843	0.00411012	0.00410843	0.000297590	0.000297590	0.000297488	0.000297488	0.000297488
n-Nonane								3.84148E-08	0		1.32490E-07		0.000880356		0.000945954	0.000989675	1.44727E-07		1.85191E-06		6.66982E-08	0.000430657	0.000911668	0.000917837	0.000911668	1.32490E-07	1.32490E-07	1.32444E-07	1.32444E-07	1.32444E-07
n-Decane								1.02783E-09	0		1.06485E-07		0.000166245		0.000173328	0.000176894	1.16837E-07		1.09842E-06		6.72552E-09	9.72185E-05	0.000169470	0.000170129	0.000169470	1.06485E-07	1.06485E-07	1.06449E-07	1.06449E-07	1.06449E-07
TEG								0.0104883	99.9880		98.5571		95.9093		95.6291	94.4825	98.5570		95.1337		9.83877	96.5182	95.7236	95.6998	95.7236	98.5571	98.5571	98.5576	98.5576	98.5576
Water								99.8768	0.0120069		1.44042		3.49221		3.48911	3.45049	1.44033		4.85152		90.1475	3.19033	3.48846	3.48823	3.48846	1.44042	1.44042	1.43993	1.43993	1.43993
Methanol								0	0		0		0		0	0	0		0		0	0	0	0	0	0	0	0	0	0
Mass Flow								lb/h	lb/h		lb/h		lb/h		lb/h	lb/h	lb/h		lb/h		lb/h	lb/h	lb/h	lb/h	lb/h	lb/h	lb/h	lb/h	lb/h	lb/h
H2S								0.0162157	0		4.85796E-06		1.24602		1.73182	2.42405	5.18307E-06		0.000170598		0.000734573	0.357430	1.53916	1.58776	1.53916	4.85796E-06	4.85796E-06	4.85796E-06	4.85796E-06	4.85796E-06
Nitrogen								8.05076E-07	0		1.75616E-14		0.000192076		0.00861096	0.712850	0		1.28094E-11		5.03648E-08	5.24696E-05	0.00764916	0.00835440	0.00764916	1.75616E-14	1.75616E-14	0	0	0
Methane								0.000459283	0		1.72412E-10		0.194062		2.59378	54.5290	0		5.81780E-08		2.80707E-05	0.0380457	2.15768	2.34888	2.15768	1.72412E-10	1.72412E-10	0	0	0
CO2								0.0397023	0		2.36364E-07		5.37786		14.3888	42.2466	0		2.49575E-05		0.00159693	0.841450	11.3894	12.1388	11.3894	2.36364E-07	2.36364E-07	0	0	0
Ethane								0.00133465	0		1.00514E-08		1.28913		6.33773	40.8326	0		1.67602E-06		7.39546E-05	0.206882	5.04355	5.44262	5.04355	1.00514E-08	1.00514E-08	0	0	0
Propane								0.00183825	0		1.26981E-07		4.03852		12.7497	47.9290	0		1.40553E-05		0.000123768	0.661030	10.1417	10.8492	10.1417	1.26981E-07	1.26981E-07	0	0	0
i-Butane								0.000237069	0		7.65575E-08		1.13399		2.97838	8.94648	0		6.71384E-06		1.47712E-05	0.195890	2.38613	2.53850	2.38613	7.65575E-08	7.65575E-08	0	0	0
n-Butane								0.00172689	0		9.04491E-07		6.01191		12.9251	30.1792	0		6.56153E-05		0.000139434	1.09359	10.5165	11.1083	10.5165	9.04491E-07	9.04491E-07	0	0	0
i-Pentane								0.000398317	0		1.37823E-06		2.91294		5.12149	9.38826	1.46571E-06		7.31606E-05		3.30203E-05	0.607247	4.28595	4.48262	4.28595	1.37823E-06	1.37823E-06	1.37823E-06	1.37823E-06	1.37823E-06
n-Pentane								0.000287158	0		2.83278E-06		4.00076		6.60085	11.1699	3.01578E-06		0.000137692		4.21942E-05	0.877430	5.58445	5.81939	5.58445	2.83278E-06	2.83278E-06	2.83278E-06	2.83278E-06	2.83278E-06
Neohexane								1.83031E-06	0		1.92725E-07		0.0442462		0.0655528	0.102671	0		5.43901E-06		1.89602E-07	0.0132302	0.0577795	0.0598714	0.0577795	1.92725E-07	1.92725E-07	0	0	0
Cyclopentane								0.00134246	0		9.86846E-05		2.91576		3.43590	3.99273	0.000106988		0.00189991		9.32294E-05	1.14623	3.20128	3.25357	3.20128	9.86846E-05	9.86846E-05	9.86846E-05	9.86846E-05	9.86846E-05
2-Methylpentane								8.56031E-05	0		1.05564E-05		1.31575		1.82436	2.63011	1.14451E-05		0.000268508		1.22160E-05	0.425480	1.63166	1.68254	1.63166	1.05564E-05	1.05564E-05	1.05564E-05	1.05564E-05	1.05564E-05
3-Methylpentane								0.000130599	0		1.31763E-05		0.987625		1.30664	1.77261	1.42733E-05		0.000299949		1.53261E-05	0.341588	1.18141	1.21366	1.18141	1.31763E-05	1.31763E-05	1.31763E-05	1.31763E-05	1.31763E-05
n-Hexane								5.62620E-05	0		2.15978E-05		1.76293		2.33139	3.14930	2.34491E-05		0.000495402		1.10331E-05	0.602621	2.10488	2.16181	2.10488	2.15978E-05	2.15978E-05	2.15978E-05	2.15978E-05	2.15978E-05
Methylcyclopentane								0.000730978	0		0.000169130		4.04682		4.64317	5.23012	0.000183362		0.00321901		8.08243E-05	1.64025	4.36260	4.42153	4.36260	0.000169130	0.000169130	0.000169130	0.000169130	0.000169130
Benzene								0.217628	0		0.0516120		22.4560		23.1301	23.6047	0.0559440		0.455388		0.0129564	14.7452	22.7763	22.8412	22.7763	0.0516120	0.0516120	0.0516120	0.0516120	0.0516120
Cyclohexane								0.00176197	0		0.000449270		5.23455		5.90756	6.57422	0.000488127		0.00711794		0.000173814	2.34156	5.59371	5.66131	5.59371	0.000449270	0.000449270	0.000449270	0.000449270	0.000449270
2-Methylhexane								5.80877E-06	0		1.83162E-06		0.277658		0.353343	0.442340	1.97190E-06		5.19029E-05		8.59270E-07	0.0850343	0.319190	0.326375	0.319190	1.83162E-06	1.83162E-06	1.83162E-06	1.83162E-06	1.83162E-06
3-Methylhexane								1.15200E-05	0		5.19927E-06		0.535874		0.659928	0.795800	5.60996E-06		0.000134562		1.64329E-06	0.174192	0.602506	0.614314	0.602506	5.19927E-06	5.19927E-06	5.19927E-06	5.19927E-06	5.19927E-06
1,1-Dimethylcyclopentane								0.000219214	0		0.000146795		2.13546		2.38135	2.60549	0.000159697		0.00248556		2.16726E-05	0.933282	2.26180	2.28584	2.26180	0.000146795	0.000146795	0.000146795	0.000146795	0.000146795
n-Heptane								6.02319E-06	0		6.15437E-06		0.477987		0.579415	0.688300	6.64376E-06		0.000152477		1.72228E-06	0.162007	0.532164	0.541854	0.532164	6.15437E-06	6.15437E-06	6.15437E-06	6.15437E-06	6.15437E-06
Methylcyclohexane								0.000293108	0		0.000346470		2.75523		3.05077	3.32683	0.000376977		0.00508462		5.01186E-05	1.29696	2.90872	2.93797	2.90872	0.000346470	0.000346470	0.000346470	0.000346470	0.000346470
1,1,2-Trimethylcyclopentane								7.03109E-07	0		2.03743E-05		0.102580		0.113671	0.124967	2.22966E-05		0.000262150		5.14097E-07	0.0513772	0.108551	0.109679	0.108551	2.03743E-05	2.03743E-05	2.03743E-05	2.03743E-05	2.03743E-05
Toluene								0.0741623	0		0.177356		17.4899		17.7811	17.9722	0.191805		1.17023		0.00946031	13.0014	17.6239	17.6512	17.6239	0.177356	0.177356	0.177356	0.177356	0.177356
2-Methylheptane								1.50054E-06	0		5.31843E-06		0.228658		0.266421	0.303697	5.75126E-06		0.000117528		6.92448E-07	0.0847396	0.248241	0.251837	0.248241	5.31843E-06	5.31843E-06	5.31843E-06	5.31843E-06	5.31843E-06
3-Methylheptane								1.79619E-07	0		1.23329E-06		0.0363009		0.0415955	0.0466725	0		2.51258E-05		1.18320E-07	0.0142375	0.0390244	0.0395305	0.0390244	1.23329E-06	1.23329E-06	0	0	0
1,1-Dimethylcyclohexane								2.82325E-06	0		4.16893E-05		0.229886		0.253853	0.277131	4.55315E-05		0.000548499		1.34944E-06	0.113525	0.242478	0.244868	0.242478	4.16893E-05	4.16893E-05	4.16893E-05	4.16893E-05	4.16893E-05
n-Octane								3.94816E-07	0		5.35090E-06		0.126216		0.142776	0.158187	5.80632E-06		0.000104336		3.30796E-07	0.0512451	0.134641	0.136220	0.134641	5.35090E-06	5.35090E-06	5.35090E-06	5.35090E-06	5.35090E-06
Ethylbenzene								0.000994112	0		0.0266625		0.765450		0.773205	0.778066	0.0287005		0.135440		0.000304740	0.617943	0.768928	0.769641	0.768928	0.0266625	0.0266625	0.0266625	0.0266625	0.0266625
m-Xylene								0.00106287	0		0.0375007		1.01432		1.02428	1.03052	0.0403437		0.190110		0.000403667	0.821809	1.01878	1.01970	1.01878	0.0375007	0.0375007	0.0375007	0.0375007	0.0375007
p-Xylene								0.00112519	0		0.0329460		0.991793		1.00217	1.00875	0.0354644		0.170283		0.000394635	0.798161	0.996468	0.997426	0.996468	0.0329460	0.0329460	0.0329460	0.0329460	0.0329460
o-Xylene								0.00130398	0		0.0449661		0.637108		0.641754	0.644565	0.0480896		0.198291		0.000367700	0.535652	0.639163	0.639586	0.639163	0.0449661	0.0449661	0.0449661	0.0449661	0.0449661
n-Nonane								1.23712E-07	0		2.00193E-05		0.136695		0.147311	0.155990	2.18759E-05		0.000294092		1.31876E-07	0.0664348	0.141831	0.142827	0.141831	2.00193E-05	2.00193E-05	2.00193E-05	2.00193E-05	2.00193E-05
n-Decane								3.31007E-09	0		1.60900E-05		0.0258133		0.0269920	0.0278816	1.76601E-05		0.000174434		1.32977E-08	0.0149973	0.0263651	0.0264742	0.0263651	1.60900E-05	1.60900E-05	1.60900E-05	1.60900E-05	1.60900E-05
TEG								0.0337770	5.20454		14892.0		14892.1		14892.1	14892.1	14897.1		15107.7		19.4533	14889.3	14892.1	14892.1	14892.1	14892.0	14892.0	14897.2	14897.2	14897.2
Water								321.647	0.000624980		217.648		542.244		543.351	543.858	217.710		770.443		178.240	492.153	542.713	542.812	542.713	217.648	217.648	217.649	217.649	217.649
Methanol								0	0		0		0		0	0	0		0		0	0	0	0	0	0	0	0	0	0

Process Streams		Blowdown	BTEX Emissions	Contactor OVHD	Dry Gas	Flash Gas	HC	Regen OVHD	Slop	TEG	Wet Gas Feed	1	2	3	4	5	11	12	13	14	15	16	18	20	22	23	24	25	26	27	28
Properties	Status:	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved	Solved
Phase: Aqueous Liquid	From Block:	TEG Makeup	BTEX Condenser	T-600	Gas/Glycol HEX	Rich Flash	Rich Flash	Condenser	BTEX Condenser	--	T-600 Scrubber	L/R HEX	To Dehy	VLVE-100	T-600 Scrubber	VLVE-102	T-600	RCYL-1	Reboiler	Regenerator	Regenerator	Condenser	L/R HEX	Rich Flash	Reflux Coil	Gly/Gly XHGR B	Reboiler	Gly/Gly XHGR A	Gas/Glycol HEX	PUMP-100	TEG Makeup
	To Block:	--	BTEX to Flare	Gas/Glycol HEX	--	Flash to Flare	Flash Cond	BTEX Condenser	BTEX Slop	TEG Makeup	T-600	Gly/Gly XHGR A	T-600 Scrubber	L/R HEX	To Slug Catcher	Reflux Coil	VLVE-102	T-600	Regenerator	Reboiler	Condenser	Regenerator	Regenerator	VLVE-100	Gly/Gly XHGR B	Rich Flash	L/R HEX	TEG Makeup	RCYL-1	Gas/Glycol HEX	PUMP-100
Property	**Units**																														
Temperature	°F								120	120		236.233		146.772		124.796	120.918	131.334		305.051		212.072	290	146.857	146.720	146.857	385	236.070	131.319	238.335	236.032
Pressure	psia								1.5	5		4		2		60	1143	1148		4.5		1.5	1.5	50	55	50	4.5	4	1148	1153	4
Mole Fraction Vapor	%								0	0		0		0		0	0	0		0		0	0	0	0	0	0	0	0	0	0
Mole Fraction Light Liquid	%								0	100		100		100		100	100	100		100		100	100	100	100	100	100	100	100	100	100
Mole Fraction Heavy Liquid	%								100	0		0		0		0	0	0		0		0	0	0	0	0	0	0	0	0	0
Phase Mole Fraction	%								97.8733	100		100		99.4440		95.3112	100	100		100		100	96.7480	100	95.1275	95.0624	100	100	100	100	100
Molecular Weight	lb/lbmol								18.0320	150.041		135.819		118.920		118.296	114.118	135.820		110.748		19.7253	121.440	118.488	118.437	118.488	135.819	135.819	135.824	135.824	135.824
Mass Density	lb/ft^3								61.6790	68.7362		64.3912		67.3590		67.8906	66.8253	68.2703		62.0035		60.6316	62.3894	67.2211	67.2097	67.2211	58.6952	64.3972	68.2709	64.4337	64.3986
Molar Flow	lbmol/h								17.8595	0.0346917		111.251		130.569		131.642	138.118	111.289		143.393		10.0237	127.029	131.299	131.389	131.299	111.251	111.251	111.286	111.286	111.286
Mass Flow	lb/h								322.043	5.20517		15110.1		15527.3		15572.8	15761.7	15115.3		15880.5		197.721	15426.4	15557.4	15561.2	15557.4	15110.1	15110.1	15115.3	15115.3	15115.3
Vapor Volumetric Flow	ft^3/h								5.22128	0.0757267		234.660		230.515		229.380	235.865	221.403		256.122		3.26102	247.260	231.436	231.533	231.436	257.433	234.639	221.401	234.586	234.714
Liquid Volumetric Flow	gpm								0.650964	0.00944126		29.2564		28.7395		28.5980	29.4065	27.6035		31.9321		0.406568	30.8272	28.8543	28.8664	28.8543	32.0955	29.2536	27.6033	29.2471	29.2631
Std Vapor Volumetric Flow	MMSCFD								0.162658	0.000315959		1.01323		1.18917		1.19895	1.25793	1.01358		1.30597		0.0912923	1.15693	1.19582	1.19664	1.19582	1.01323	1.01323	1.01355	1.01355	1.01355
Std Liquid Volumetric Flow	sgpm								0.643903	0.00921187		26.7908		27.6880		27.8515	28.7262	26.8		28.2820		0.390805	27.4451	27.7994	27.8132	27.7994	26.7908	26.7908	26.8	26.8	26.8
Compressibility									0.000761147	0.00691125		0.00528045		0.00452916		0.0207508	0.317303	0.364707		0.00417793		0.000730910	0.00391854	0.0175200	0.0188732	0.0175200	0.00490025	0.00528119	0.364723	0.328602	0.00528153
Specific Gravity									0.988942	1.10209		1.03243		1.08001		1.08854	1.07146	1.09462		0.994144		0.972147	1.00033	1.07780	1.07762	1.07780	0.941099	1.03252	1.09463	1.03311	1.03255
API Gravity									9.98407	-7.13116		-6.52840		-5.63741		-5.29676	-3.14124	-6.69621		-5.86249		7.84698	-5.93156	-5.39922	-5.37093	-5.39922	-6.52847	-6.52840	-6.69644	-6.69717	-6.52855
Enthalpy	Btu/h								-2.18068E+06	-11894.4		-3.44866E+07		-3.75570E+07		-3.78342E+07	-3.81555E+07	-3.53859E+07		-3.79686E+07		-1.23657E+06	-3.58056E+07	-3.76063E+07	-3.76141E+07	-3.76063E+07	-3.30568E+07	-3.44881E+07	-3.53859E+07	-3.44334E+07	-3.45000E+07
Mass Enthalpy	Btu/lb								-6771.39	-2285.11		-2282.36		-2418.78		-2429.51	-2420.77	-2341.07		-2390.90		-6254.12	-2321.06	-2417.27	-2417.16	-2417.27	-2187.74	-2282.46	-2341.07	-2278.06	-2282.46
Mass Cp	Btu/(lb*°F)								0.977185	0.551593		0.610572		0.589564		0.579734	0.577526	0.566480		0.660613		0.987270	0.642660	0.589568	0.589505	0.589568	0.659946	0.610512	0.566470	0.609274	0.610495
Ideal Gas CpCv Ratio									1.32716	1.03437		1.03344		1.04214		1.04358	1.04544	1.03746		1.03917		1.28774	1.03597	1.04230	1.04233	1.04230	1.03012	1.03345	1.03746	1.03338	1.03345
Dynamic Viscosity	cP								0.570433	13.8328		2.68904		7.85489		10.9738	8.57199	11.5388		1.35944		0.333367	1.56672	7.58361	7.57025	7.58361	0.820342	2.69351	11.5421	2.74441	2.69456
Kinematic Viscosity	cSt								0.577359	12.5633		2.60706		7.27987		10.0908	8.00792	10.5513		1.36875		0.343244	1.56768	7.04287	7.03165	7.04287	0.872513	2.61114	10.5543	2.65898	2.61211
Thermal Conductivity	Btu/(h*ft*°F)								0.366910	0.112309		0.113843?		0.116760?		0.116120?	0.113841?	0.114362?		0.116859?		0.352638?	0.114628?	0.116409?	0.116366?	0.116409?	0.108096?	0.113846?	0.114361?	0.113802?	0.113846?
Surface Tension	lbf/ft								0.00466165	0.00294474		0.00259303?		0.00289983		0.00293670	0.00280137	0.00292559		0.00244849?		0.00392349?	0.00244767?	0.00288220	0.00288052	0.00288220	0.00207581?	0.00259357?	0.00292564	0.00258855	0.00259368
Net Ideal Gas Heating Value	Btu/ft^3								0.859193	3773.23		3366.87		2900.86		2891.09	2817.75	3366.89		2650.63		48.9272	2964.41	2894.08	2893.28	2894.08	3366.87	3366.87	3366.99	3366.99	3366.99
Net Liquid Heating Value	Btu/lb								-1040.59	9283.53		9135.97		8969.94		8987.85	9085.73	9135.99		8784.11		-39.6308	8978.49	8982.23	8983.76	8982.23	9135.97	9135.97	9136.02	9136.02	9136.02
Gross Ideal Gas Heating Value	Btu/ft^3								51.1954	4124.75		3685.94		3181.68		3170.84	3090.31	3685.96		2912.50		103.137	3250.73	3174.16	3173.28	3174.16	3685.94	3685.94	3686.07	3686.07	3686.07
Gross Liquid Heating Value	Btu/lb								18.7334	10172.6		10027.5		9866.07		9885.26	9992.10	10027.5		9681.42		1003.29	9873.22	9879.26	9880.90	9879.26	10027.5	10027.5	10027.5	10027.5	10027.5


LP Dumps
To Produced Water Tank
Flash Cond
17
4
LV-101
LV-102
From 1st Stage
From Flash Tank
MIX-100
Produced Water Tank Losses
2
Flare KO to Tanks
1
RCYL-1
Annual tank loss calculations for "Produced Water Tank Losses".
Total working and breathing losses are 1.553 ton/yr.
Flashing losses are 18.72 ton/yr.
Loading losses are 0.006133 ton/yr of loaded liquid.
* All components are reported.
Vapor adjusted to ensure mass balance
Tank-3
T-300 A/B Flashing Losses
T-300 A/B Working Losses
T-300 A/B Breathing Losses
T-300 A/B Loading Losses
T-300 A/B Residual Losses
MIX-101
3
T-300 A
7
MIX-105
11
Tank Emissions
Condensate Truck Loading
Q-2
Annual tank loss calculations for "Slop Tank Losses".
Total working and breathing losses are 0.1212 ton/yr.
Flashing losses are 0.02727 ton/yr.
Loading losses are 0.002982 ton/yr of loaded liquid.
* All components are reported.
Tank-1
T-500 Flashing Losses
T-500 Working Losses
T-500 Breathing Losses
T-500 Loading Losses
T-500 Residual Losses
MIX-102
8
24.874 bbl/d
To Atmosphere
Slop Tank Losses
Q-4
T-500
V-001 Slop
BTEX Slop
5
6
LV-402
LV-104
From SC Slop
From BTEX
MIX-103
Std Liquid Volumetric Flow 24.874 bbl/d
Slop Truck Loading

Process Streams		Condensate Truck Loading	From BTEX	Produced Water Tank Losses	Slop Tank Losses	Slop Truck Loading
Composition	Status:	Solved	Solved	Solved	Solved	Solved
Phase: Total	From Block:	T-300 A	LV-104	MIX-100	MIX-103	T-500
	To Block:	--	MIX-103	T-300 A	T-500	--
Mole Fraction		%	%	%	%	%
H2S		0.00280677	0.00460828	0.0300720	0.00460828	0.00460828
Nitrogen		0.000155680	4.38575E-07	0.0492002	4.38575E-07	4.38575E-07
Methane		0.0756953	0.000684374	6.74542	0.000684374	0.000684374
CO2		0.0184986	0.00817562	0.582679	0.00817562	0.00817562
Ethane		0.454825	0.00399201	6.40657	0.00399201	0.00399201
Propane		2.69092	0.0153722	11.7825	0.0153722	0.0153722
i-Butane		1.79100	0.00543158	3.74482	0.00543158	0.00543158
n-Butane		8.54495	0.0365708	13.2811	0.0365708	0.0365708
i-Pentane		7.36556	0.0293997	6.95340	0.0293997	0.0293997
n-Pentane		10.7001	0.0482889	9.02215	0.0482889	0.0482889
Neohexane		0.142301	0.000574906	0.104058	0.000574906	0.000574906
Cyclopentane		1.43848	0.0471466	1.06828	0.0471466	0.0471466
2-Methylpentane		4.83796	0.0213815	3.26064	0.0213815	0.0213815
3-Methylpentane		3.07453	0.0171169	2.02731	0.0171169	0.0171169
n-Hexane		7.78180	0.0346046	4.95061	0.0346046	0.0346046
Methylcyclopentane		3.96875	0.0806185	2.52640	0.0806185	0.0806185
Benzene		2.91530	0.632516	1.84578	0.632516	0.632516
Cyclohexane		6.86051	0.129745	4.20030	0.129745	0.129745
2-Methylhexane		1.78917	0.00721177	1.05622	0.00721177	0.00721177
3-Methylhexane		2.97270	0.0146180	1.74225	0.0146180	0.0146180
1,1-Dimethylcyclopentane		3.16087	0.0549262	1.88089	0.0549262	0.0549262
n-Heptane		3.37213	0.0146852	1.94769	0.0146852	0.0146852
Methylcyclohexane		7.48256	0.0850681	4.32075	0.0850681	0.0850681
1,1,2-Trimethylcyclopentane		0.435746	0.00336538	0.248396	0.00336538	0.00336538
Toluene		4.68852	0.678626	2.69558	0.678626	0.678626
2-Methylheptane		2.59340	0.00797897	1.46035	0.00797897	0.00797897
3-Methylheptane		0.384231	0.00128874	0.216032	0.00128874	0.00128874
1,1-Dimethylcyclohexane		1.41540	0.00826825	0.799262	0.00826825	0.00826825
n-Octane		1.67103	0.00479233	0.934694	0.00479233	0.00479233
Ethylbenzene		0.494888	0.0329130	0.276228	0.0329130	0.0329130
m-Xylene		0.700664	0.0431630	0.390658	0.0431630	0.0431630
p-Xylene		0.695201	0.0422617	0.387802	0.0422617	0.0422617
o-Xylene		0.358407	0.0260166	0.199604	0.0260166	0.0260166
n-Nonane		3.80075	0.00528397	2.10450	0.00528397	0.00528397
n-Decane		1.31895	0.000959915	0.728121	0.000959915	0.000959915
TEG		0	0.00123304	0	0.00123304	0.00123304
Water		0.00120561	97.8511	0.0297023	97.8511	97.8511
Methanol		0	0	0	0	0
Molar Flow		lbmol/h	lbmol/h	lbmol/h	lbmol/h	lbmol/h
H2S		4.11400E-06	0.000840901	7.99605E-05	0.000840901	0.000840901
Nitrogen		2.28186E-07	8.00295E-08	0.000130822	8.00295E-08	8.00295E-08
Methane		0.000110950	0.000124882	0.0179358	0.000124882	0.000124882
CO2		2.71142E-05	0.00149186	0.00154932	0.00149186	0.00149186
Ethane		0.000666655	0.000728447	0.0170349	0.000728447	0.000728447
Propane		0.00394419	0.00280505	0.0313292	0.00280505	0.00280505
i-Butane		0.00262514	0.000991135	0.00995734	0.000991135	0.000991135
n-Butane		0.0125247	0.00667330	0.0353140	0.00667330	0.00667330
i-Pentane		0.0107960	0.00536475	0.0184888	0.00536475	0.00536475
n-Pentane		0.0156836	0.00881158	0.0239896	0.00881158	0.00881158
Neohexane		0.000208576	0.000104907	0.000276687	0.000104907	0.000104907
Cyclopentane		0.00210843	0.00860313	0.00284052	0.00860313	0.00860313
2-Methylpentane		0.00709119	0.00390161	0.00866993	0.00390161	0.00390161
3-Methylpentane		0.00450646	0.00312342	0.00539054	0.00312342	0.00312342
n-Hexane		0.0114061	0.00631452	0.0131635	0.00631452	0.00631452
Methylcyclopentane		0.00581715	0.0147110	0.00671761	0.0147110	0.0147110
Benzene		0.00427308	0.115419	0.00490786	0.115419	0.115419
Cyclohexane		0.0100557	0.0236754	0.0111685	0.0236754	0.0236754
2-Methylhexane		0.00262245	0.00131598	0.00280846	0.00131598	0.00131598
3-Methylhexane		0.00435720	0.00266744	0.00463259	0.00266744	0.00266744
1,1-Dimethylcyclopentane		0.00463301	0.0100227	0.00500122	0.0100227	0.0100227
n-Heptane		0.00494266	0.00267969	0.00517885	0.00267969	0.00267969
Methylcyclohexane		0.0109675	0.0155229	0.0114887	0.0155229	0.0155229
1,1,2-Trimethylcyclopentane		0.000638690	0.000614102	0.000660477	0.000614102	0.000614102
Toluene		0.00687216	0.123833	0.00716745	0.123833	0.123833
2-Methylheptane		0.00380125	0.00145597	0.00388303	0.00145597	0.00145597
3-Methylheptane		0.000563182	0.000235165	0.000574421	0.000235165	0.000235165
1,1-Dimethylcyclohexane		0.00207460	0.00150876	0.00212521	0.00150876	0.00150876
n-Octane		0.00244930	0.000874486	0.00248532	0.000874486	0.000874486
Ethylbenzene		0.000725377	0.00600585	0.000734480	0.00600585	0.00600585
m-Xylene		0.00102699	0.00787621	0.00103875	0.00787621	0.00787621
p-Xylene		0.00101898	0.00771176	0.00103115	0.00771176	0.00771176
o-Xylene		0.000525331	0.00474742	0.000530740	0.00474742	0.00474742
n-Nonane		0.00557091	0.000964200	0.00559578	0.000964200	0.000964200
n-Decane		0.00193324	0.000175162	0.00193605	0.000175162	0.000175162
TEG		0	0.000225001	0	0.000225001	0.000225001
Water		1.76712E-06	17.8555	7.89775E-05	17.8555	17.8555
Methanol		0	0	0	0	0
Mass Fraction		%	%	%	%	%
H2S		0.00111384	0.00806182	0.0148039	0.00806182	0.00806182
Nitrogen		5.07812E-05	6.30657E-07	0.0199084	6.30657E-07	6.30657E-07
Methane		0.0141398	0.000563571	1.56309	0.000563571	0.000563571
CO2		0.00947961	0.0184693	0.370407	0.0184693	0.0184693
Ethane		0.159246	0.00616162	2.78259	0.00616162	0.00616162
Propane		1.38166	0.0347948	7.50474	0.0347948	0.0347948
i-Butane		1.21211	0.0162051	3.14396	0.0162051	0.0162051
n-Butane		5.78304	0.109109	11.1501	0.109109	0.109109
i-Pentane		6.18784	0.108882	7.24652	0.108882	0.108882
n-Pentane		8.98922	0.178838	9.40249	0.178838	0.178838
Neohexane		0.142789	0.00254310	0.129528	0.00254310	0.00254310
Cyclopentane		1.17470	0.169729	1.08221	0.169729	0.169729
2-Methylpentane		4.85456	0.0945810	4.05872	0.0945810	0.0945810
3-Methylpentane		3.08508	0.0757167	2.52352	0.0757167	0.0757167
n-Hexane		7.80850	0.153074	6.16234	0.153074	0.153074

Methylcyclopentane		3.88920	0.348274	3.07120	0.348274	0.348274
Benzene		2.65158	2.53614	2.08257	2.53614	2.53614
Cyclohexane		6.72300	0.560502	5.10607	0.560502	0.560502
2-Methylhexane		2.08752	0.0370938	1.52875	0.0370938	0.0370938
3-Methylhexane		3.46841	0.0751879	2.52169	0.0751879	0.0751879
1,1-Dimethylcyclopentane		3.61377	0.276830	2.66758	0.276830	0.276830
n-Heptane		3.93445	0.0755334	2.81903	0.0755334	0.0755334
Methylcyclohexane		8.55469	0.428746	6.12791	0.428746	0.428746
1,1,2-Trimethylcyclopentane		0.569350	0.0193847	0.402615	0.0193847	0.0193847
Toluene		5.03015	3.20963	3.58754	3.20963	3.20963
2-Methylheptane		3.44944	0.0467848	2.40955	0.0467848	0.0467848
3-Methylheptane		0.511058	0.00755656	0.356448	0.00755656	0.00755656
1,1-Dimethylcyclohexane		1.84937	0.0476255	1.29549	0.0476255	0.0476255
n-Octane		2.22261	0.0280999	1.54222	0.0280999	0.0280999
Ethylbenzene		0.611776	0.179363	0.423597	0.179363	0.179363
m-Xylene		0.866155	0.235221	0.599075	0.235221	0.235221
p-Xylene		0.859401	0.230310	0.594696	0.230310	0.230310
o-Xylene		0.443059	0.141780	0.306094	0.141780	0.141780
n-Nonane		5.67607	0.0347872	3.89876	0.0347872	0.0347872
n-Decane		2.18516	0.00701077	1.49643	0.00701077	0.00701077
TEG		0	0.00950504	0	0.00950504	0.00950504
Water		0.000252903	90.4879	0.00772921	90.4879	90.4879
Methanol		0	0	0	0	0
Mass Flow		**lb/h**	**lb/h**	**lb/h**	**lb/h**	**lb/h**
H2S		0.000140209	0.0286586	0.00272512	0.0286586	0.0286586
Nitrogen		6.39228E-06	2.24190E-06	0.00366476	2.24190E-06	2.24190E-06
Methane		0.00177990	0.00200342	0.287735	0.00200342	0.00200342
CO2		0.00119328	0.0656558	0.0681849	0.0656558	0.0656558
Ethane		0.0200457	0.0219037	0.512222	0.0219037	0.0219037
Propane		0.173921	0.123691	1.38148	0.123691	0.123691
i-Butane		0.152579	0.0576070	0.578743	0.0576070	0.0576070
n-Butane		0.727962	0.387867	2.05253	0.387867	0.387867
i-Pentane		0.778918	0.387060	1.33395	0.387060	0.387060
n-Pentane		1.13155	0.635745	1.73082	0.635745	0.635745
Neohexane		0.0179741	0.00904037	0.0238436	0.00904037	0.00904037
Cyclopentane		0.147870	0.603362	0.199214	0.603362	0.603362
2-Methylpentane		0.611086	0.336222	0.747134	0.336222	0.336222
3-Methylpentane		0.388346	0.269162	0.464531	0.269162	0.269162
n-Hexane		0.982924	0.544156	1.13437	0.544156	0.544156
Methylcyclopentane		0.489569	1.23807	0.565350	1.23807	1.23807
Benzene		0.333778	9.01561	0.383362	9.01561	9.01561
Cyclohexane		0.846284	1.99251	0.939931	1.99251	1.99251
2-Methylhexane		0.262775	0.131863	0.281413	0.131863	0.131863
3-Methylhexane		0.436600	0.267282	0.464195	0.267282	0.267282
1,1-Dimethylcyclopentane		0.454897	0.984092	0.491050	0.984092	0.984092
n-Heptane		0.495265	0.268511	0.518931	0.268511	0.268511
Methylcyclohexane		1.07685	1.52413	1.12803	1.52413	1.52413
1,1,2-Trimethylcyclopentane		0.0716691	0.0689100	0.0741138	0.0689100	0.0689100
Toluene		0.633190	11.4098	0.660397	11.4098	11.4098
2-Methylheptane		0.434212	0.166314	0.443552	0.166314	0.166314
3-Methylheptane		0.0643314	0.0268625	0.0656153	0.0268625	0.0268625
1,1-Dimethylcyclohexane		0.232797	0.169302	0.238475	0.169302	0.169302
n-Octane		0.279779	0.0998913	0.283894	0.0998913	0.0998913
Ethylbenzene		0.0770096	0.637611	0.0779761	0.637611	0.637611
m-Xylene		0.109031	0.836178	0.110278	0.836178	0.836178
p-Xylene		0.108180	0.818719	0.109472	0.818719	0.818719
o-Xylene		0.0557717	0.504010	0.0563461	0.504010	0.504010
n-Nonane		0.714497	0.123664	0.717688	0.123664	0.123664
n-Decane		0.275065	0.0249223	0.275464	0.0249223	0.0249223
TEG		0	0.0337891	0	0.0337891	0.0337891
Water		3.18351E-05	321.672	0.00142280	321.672	321.672
Methanol		0	0	0	0	0

Process Streams		**Condensate Truck Loading**	**From BTEX**	**Produced Water Tank Losses**	**Slop Tank Losses**	**Slop Truck Loading**
Properties	**Status:**	Solved	Solved	Solved	Solved	Solved
Phase: **Total**	**From Block:**	**T-300 A**	**LV-104**	**MIX-100**	**MIX-103**	**T-500**
	To Block:	**--**	**MIX-103**	**T-300 A**	**T-500**	**--**
Property	**Units**					
Temperature	°F	75	119.974	19.3552	119.974	75
Pressure	psig	0.5	0.5*	0.5*	0.5	0.5
Mole Fraction Vapor	%	0	0.00539480	24.0591	0.00539480	0
Mole Fraction Light Liquid	%	100	2.12254	75.9409	2.12254	2.12614
Mole Fraction Heavy Liquid	%	0	97.8721	0	97.8721	97.8739
Phase Mole Fraction	%	100	100	100	100	100
Molecular Weight	lb/lbmol	85.8808	19.4812	69.2303	19.4812	19.4812
Mass Density	lb/ft^3	43.5442	56.4894	0.849937	56.4894	60.9599
Molar Flow	lbmol/h	0.146574	18.2476	0.265897	18.2476	18.2476
Mass Flow	lb/h	12.5879	355.486	18.4081	355.486	355.486
Vapor Volumetric Flow	ft^3/h	0.289083	6.29297	21.6582	6.29297	5.83148
Liquid Volumetric Flow	gpm	0.0360415	0.784578	2.70024	0.784578	0.727041
Std Vapor Volumetric Flow	MMSCFD	0.00133494	0.166192	0.00242168	0.166192	0.166192
Std Liquid Volumetric Flow	sgpm	0.0359765	0.725482	0.0576850	0.725482	0.725482
Compressibility		0.00522329	0.000842465	0.240777	0.000842465	0.000846351
Specific Gravity		0.698174				0.977411
API Gravity		68.9284				12.8347
Enthalpy	Btu/h	-10548.1?	-2.18650E+06	-17486.1	-2.18650E+06	-2.20132E+06?
Mass Enthalpy	Btu/lb	-837.960?	-6150.75	-949.912	-6150.75	-6192.42?
Mass Cp	Btu/(lb*°F)	0.492897?	0.926571	0.458857?	0.926571	0.924646?
Ideal Gas CpCv Ratio		1.06860	1.30676	1.09219	1.30676	1.31048
Dynamic Viscosity	cP	0.363516				0.889744
Kinematic Viscosity	cSt	0.521161				0.911172
Thermal Conductivity	Btu/(h*ft*°F)	0.0678688				0.317932
Surface Tension	lbf/ft	0.00132245?				0.00462443?
Net Ideal Gas Heating Value	Btu/ft^3	4308.04	87.6871	3498.48	87.6871	87.6871
Net Liquid Heating Value	Btu/lb	18918.8	734.380	19051.3	734.380	734.380
Gross Ideal Gas Heating Value	Btu/ft^3	4631.45	141.782	3772.06	141.782	141.782
Gross Liquid Heating Value	Btu/lb	20348.0	1788.07	20551.0	1788.07	1788.07

Process Streams		Condensate Truck Loading	From BTEX	Produced Water Tank Losses	Slop Tank Losses	Slop Truck Loading
Composition	**Status:**	Solved	Solved	Solved	Solved	Solved
Phase: **Vapor**	**From Block:**	T-300 A	LV-104	MIX-100	MIX-103	T-500
	To Block:	--	MIX-103	T-300 A	T-500	--
Mole Fraction			%	%	%	
H2S			2.54604	0.0994162	2.54604	
Nitrogen			0.00541224	0.203516	0.00541224	
Methane			4.89460	27.4644	4.89460	
CO2			13.8466	2.25623	13.8466	
Ethane			8.73385	22.4255	8.73385	
Propane			12.8607	26.5986	12.8607	
i-Butane			2.32006	4.45401	2.32006	
n-Butane			10.1727	10.7527	10.1727	
i-Pentane			3.18237	2.15529	3.18237	
n-Pentane			4.04423	1.99139	4.04423	
Neohexane			0.0333948	0.0135147	0.0333948	
Cyclopentane			2.18770	0.151895	2.18770	
2-Methylpentane			0.888290	0.271047	0.888290	
3-Methylpentane			0.625667	0.145016	0.625667	
n-Hexane			1.07069	0.256305	1.07069	
Methylcyclopentane			2.19498	0.140638	2.19498	
Benzene			10.3759	0.100974	10.3759	
Cyclohexane			2.53014	0.160841	2.53014	
2-Methylhexane			0.110586	0.0228000	0.110586	
3-Methylhexane			0.197900	0.0322897	0.197900	
1,1-Dimethylcyclopentane			0.769642	0.0467889	0.769642	
n-Heptane			0.155650	0.0259109	0.155650	
Methylcyclohexane			0.834040	0.0584565	0.834040	
1,1,2-Trimethylcyclopentane			0.0208875	0.00251271	0.0208875	
Toluene			3.87444	0.0342695	3.87444	
2-Methylheptane			0.0424298	0.00750195	0.0424298	
3-Methylheptane			0.00629792	0.00102389	0.00629792	
1,1-Dimethylcyclohexane			0.0385530	0.00515716	0.0385530	
n-Octane			0.0179932	0.00307543	0.0179932	
Ethylbenzene			0.0582821	0.000814457	0.0582821	
m-Xylene			0.0808155	0.00103735	0.0808155	
p-Xylene			0.0806482	0.00109222	0.0806482	
o-Xylene			0.0502344	0.000472220	0.0502344	
n-Nonane			0.00837109	0.00159511	0.00837109	
n-Decane			0.000593019	0.000150565	0.000593019	
TEG			7.89028E-09	0	7.89028E-09	
Water			11.1392	0.113855	11.1392	
Methanol			0	0	0	
Molar Flow			lbmol/h	lbmol/h	lbmol/h	
H2S			2.50638E-05	6.35988E-05	2.50638E-05	
Nitrogen			5.32794E-08	0.000130194	5.32794E-08	
Methane			4.81835E-05	0.0175696	4.81835E-05	
CO2			0.000136309	0.00144336	0.000136309	
Ethane			8.59781E-05	0.0143461	8.59781E-05	
Propane			0.000126604	0.0170157	0.000126604	
i-Butane			2.28392E-05	0.00284934	2.28392E-05	
n-Butane			0.000100143	0.00687873	0.000100143	
i-Pentane			3.13280E-05	0.00137879	3.13280E-05	
n-Pentane			3.98123E-05	0.00127394	3.98123E-05	
Neohexane			3.28746E-07	8.64567E-06	3.28746E-07	
Cyclopentane			2.15362E-05	9.71706E-05	2.15362E-05	
2-Methylpentane			8.74453E-06	0.000173395	8.74453E-06	
3-Methylpentane			6.15921E-06	9.27702E-05	6.15921E-06	
n-Hexane			1.05401E-05	0.000163965	1.05401E-05	
Methylcyclopentane			2.16079E-05	8.99695E-05	2.16079E-05	
Benzene			0.000102143	6.45956E-05	0.000102143	
Cyclohexane			2.49073E-05	0.000102893	2.49073E-05	
2-Methylhexane			1.08864E-06	1.45857E-05	1.08864E-06	
3-Methylhexane			1.94817E-06	2.06565E-05	1.94817E-06	
1,1-Dimethylcyclopentane			7.57654E-06	2.99319E-05	7.57654E-06	
n-Heptane			1.53225E-06	1.65758E-05	1.53225E-06	
Methylcyclohexane			8.21048E-06	3.73960E-05	8.21048E-06	
1,1,2-Trimethylcyclopentane			2.05621E-07	1.60744E-06	2.05621E-07	
Toluene			3.81409E-05	2.19230E-05	3.81409E-05	
2-Methylheptane			4.17688E-07	4.79917E-06	4.17688E-07	
3-Methylheptane			6.19982E-08	6.55009E-07	6.19982E-08	
1,1-Dimethylcyclohexane			3.79524E-07	3.29916E-06	3.79524E-07	
n-Octane			1.77129E-07	1.96742E-06	1.77129E-07	
Ethylbenzene			5.73742E-07	5.21027E-07	5.73742E-07	
m-Xylene			7.95566E-07	6.63616E-07	7.95566E-07	
p-Xylene			7.93920E-07	6.98719E-07	7.93920E-07	
o-Xylene			4.94519E-07	3.02090E-07	4.94519E-07	
n-Nonane			8.24070E-08	1.02043E-06	8.24070E-08	
n-Decane			5.83781E-09	9.63197E-08	5.83781E-09	
TEG			7.76737E-14	0	7.76737E-14	
Water			0.000109657	7.28358E-05	0.000109657	
Methanol			0	0	0	
Mass Fraction			%	%	%	
H2S			1.65437	0.0913591	1.65437	
Nitrogen			0.00289068	0.153726	0.00289068	
Methane			1.49708	11.8802	1.49708	
CO2			11.6184	2.67741	11.6184	
Ethane			5.00705	18.1821	5.00705	
Propane			10.8123	31.6256	10.8123	
i-Butane			2.57097	6.98036	2.57097	
n-Butane			11.2729	16.8516	11.2729	
i-Pentane			4.37760	4.19293	4.37760	
n-Pentane			5.56316	3.87408	5.56316	
Neohexane			0.0548680	0.0314032	0.0548680	
Cyclopentane			2.92527	0.287243	2.92527	
2-Methylpentane			1.45947	0.629813	1.45947	
3-Methylpentane			1.02798	0.336964	1.02798	

n-Hexane		1.75916	0.595559	1.75916
Methylcyclopentane		3.52201	0.319147	3.52201
Benzene		15.4526	0.212673	15.4526
Cyclohexane		4.05980	0.364992	4.05980
2-Methylhexane		0.211269	0.0616020	0.211269
3-Methylhexane		0.378076	0.0872417	0.378076
1,1-Dimethylcyclopentane		1.44077	0.123873	1.44077
n-Heptane		0.297359	0.0700073	0.297359
Methylcyclohexane		1.56133	0.154763	1.56133
1,1,2-Trimethylcyclopentane		0.0446874	0.00760272	0.0446874
Toluene		6.80623	0.0851399	6.80623
2-Methylheptane		0.0924064	0.0231064	0.0924064
3-Methylheptane		0.0137160	0.00315365	0.0137160
1,1-Dimethylcyclohexane		0.0824814	0.0156040	0.0824814
n-Octane		0.0391868	0.00947249	0.0391868
Ethylbenzene		0.117970	0.00233149	0.117970
m-Xylene		0.163581	0.00296955	0.163581
p-Xylene		0.163242	0.00312663	0.163242
o-Xylene		0.101681	0.00135179	0.101681
n-Nonane		0.0204698	0.00551634	0.0204698
n-Decane		0.00160870	0.000577639	0.00160870
TEG		2.25913E-08	0	2.25913E-08
Water		3.82608	0.0553068	3.82608
Methanol		0	0	0
Mass Flow		**lb/h**	**lb/h**	**lb/h**
H2S		0.000854195	0.00216750	0.000854195
Nitrogen		1.49254E-06	0.00364717	1.49254E-06
Methane		0.000772982	0.281860	0.000772982
CO2		0.00599888	0.0635218	0.00599888
Ethane		0.00258528	0.431373	0.00258528
Propane		0.00558269	0.750320	0.00558269
i-Butane		0.00132746	0.165610	0.00132746
n-Butane		0.00582051	0.399807	0.00582051
i-Pentane		0.00226028	0.0994777	0.00226028
n-Pentane		0.00287241	0.0919130	0.00287241
Neohexane		2.83298E-05	0.000745044	2.83298E-05
Cyclopentane		0.00151040	0.00681486	0.00151040
2-Methylpentane		0.000753563	0.0149424	0.000753563
3-Methylpentane		0.000530772	0.00799451	0.000530772
n-Hexane		0.000908301	0.0141297	0.000908301
Methylcyclopentane		0.00181851	0.00757179	0.00181851
Benzene		0.00797859	0.00504568	0.00797859
Cyclohexane		0.00209618	0.00865946	0.00209618
2-Methylhexane		0.000109084	0.00146151	0.000109084
3-Methylhexane		0.000195211	0.00206982	0.000195211
1,1-Dimethylcyclopentane		0.000743910	0.00293890	0.000743910
n-Heptane		0.000153535	0.00166093	0.000153535
Methylcyclohexane		0.000806155	0.00367176	0.000806155
1,1,2-Trimethylcyclopentane		2.30733E-05	0.000180375	2.30733E-05
Toluene		0.00351424	0.00201995	0.00351424
2-Methylheptane		4.77119E-05	0.000548202	4.77119E-05
3-Methylheptane		7.08197E-06	7.48207E-05	7.08197E-06
1,1-Dimethylcyclohexane		4.25874E-05	0.000370207	4.25874E-05
n-Octane		2.02332E-05	0.000224736	2.02332E-05
Ethylbenzene		6.09113E-05	5.53148E-05	6.09113E-05
m-Xylene		8.44613E-05	7.04528E-05	8.44613E-05
p-Xylene		8.42865E-05	7.41795E-05	8.42865E-05
o-Xylene		5.25006E-05	3.20714E-05	5.25006E-05
n-Nonane		1.05691E-05	0.000130876	1.05691E-05
n-Decane		8.30614E-07	1.37045E-05	8.30614E-07
TEG		1.16645E-11	0	1.16645E-11
Water		0.00197551	0.00131216	0.00197551
Methanol		0	0	0

Process Streams		**Condensate Truck Loading**	**From BTEX**	**Produced Water Tank Losses**	**Slop Tank Losses**	**Slop Truck Loading**
Properties	**Status:**	Solved	Solved	Solved	Solved	Solved
Phase: **Vapor**	**From Block:**	**T-300 A**	**LV-104**	**MIX-100**	**MIX-103**	**T-500**
	To Block:	**--**	**MIX-103**	**T-300 A**	**T-500**	**--**
Property	**Units**					
Temperature	°F		119.974	19.3552	119.974	
Pressure	psig		0.5	0.5	0.5	
Mole Fraction Vapor	%		100	100	100	
Mole Fraction Light Liquid	%		0	0	0	
Mole Fraction Heavy Liquid	%		0	0	0	
Phase Mole Fraction	%		0.00539480	24.0591	0.00539480	
Molecular Weight	lb/lbmol		52.4497	37.0865	52.4497	
Mass Density	lb/ft^3		0.130282	0.111416	0.130282	
Molar Flow	lbmol/h		0.000984423	0.0639723	0.000984423	
Mass Flow	lb/h		0.0516327	2.37251	0.0516327	
Vapor Volumetric Flow	ft^3/h		0.396315	21.2941	0.396315	
Liquid Volumetric Flow	gpm		0.0494107	2.65485	0.0494107	
Std Vapor Volumetric Flow	MMSCFD		8.96575E-06	0.000582635	8.96575E-06	
Std Liquid Volumetric Flow	sgpm		0.000156805	0.0102226	0.000156805	
Compressibility			0.983471	0.983951	0.983471	
Specific Gravity			1.81095	1.28050	1.81095	
API Gravity						
Enthalpy	Btu/h		-57.5562	-2917.34?	-57.5562	
Mass Enthalpy	Btu/lb		-1114.72	-1229.64?	-1114.72	
Mass Cp	Btu/(lb*°F)		0.357419	0.384403?	0.357419	
Ideal Gas CpCv Ratio			1.11945	1.16355	1.11945	
Dynamic Viscosity	cP		0.00968300	0.00812981	0.00968300	
Kinematic Viscosity	cSt		4.63986	4.55524	4.63986	
Thermal Conductivity	Btu/(h*ft*°F)		0.0104137	0.0103707?	0.0104137	
Surface Tension	lbf/ft					
Net Ideal Gas Heating Value	Btu/ft^3		2192.54	1903.91	2192.54	
Net Liquid Heating Value	Btu/lb		15686.3	19345.2	15686.3	
Gross Ideal Gas Heating Value	Btu/ft^3		2357.83	2074.41	2357.83	
Gross Liquid Heating Value	Btu/lb		16882.3	21090.4	16882.3	

Process Streams		Condensate Truck Loading	From BTEX	Produced Water Tank Losses	Slop Tank Losses	Slop Truck Loading
Composition	Status:	Solved	Solved	Solved	Solved	Solved
Phase: Nonspecific Liquid	From Block:	T-300 A	LV-104	MIX-100	MIX-103	T-500
	To Block:	--	MIX-103	T-300 A	T-500	--
Mole Fraction		%	%	%	%	%
H2S		0.00280677	0.0913681	0.00810286	0.0913681	0.0951412
Nitrogen		0.000155680	4.42167E-06	0.000310972	4.42167E-06	1.20473E-05
Methane		0.0756953	0.0152540	0.181367	0.0152540	0.0241762
CO2		0.0184986	0.138165	0.0524742	0.138165	0.140822
Ethane		0.454825	0.155749	1.33158	0.155749	0.175555
Propane		2.69092	0.681246	7.08853	0.681246	0.712812
i-Butane		1.79100	0.248972	3.52014	0.248972	0.254325
n-Butane		8.54495	1.68955	14.0822	1.68955	1.71394
i-Pentane		7.36556	1.37561	8.47350	1.37561	1.38159
n-Pentane		10.7001	2.26375	11.2496	2.26375	2.27064
Neohexane		0.142301	0.0269955	0.132743	0.0269955	0.0270354
Cyclopentane		1.43848	2.21074	1.35860	2.21074	2.21341
2-Methylpentane		4.83796	1.00484	4.20778	1.00484	1.00549
3-Methylpentane		3.07453	0.804454	2.62364	0.804454	0.804802
n-Hexane		7.78180	1.62745	6.43783	1.62745	1.62749
Methylcyclopentane		3.96875	3.79039	3.28224	3.79039	3.79023
Benzene		2.91530	29.0540	2.39855	29.0540	29.1574
Cyclohexane		6.86051	6.10089	5.48005	6.10089	6.09842
2-Methylhexane		1.78917	0.339475	1.38362	0.339475	0.339184
3-Methylhexane		2.97270	0.688172	2.28399	0.688172	0.687514
1,1-Dimethylcyclopentane		3.16087	2.58523	2.46196	2.58523	2.58286
n-Heptane		3.37213	0.691458	2.55654	0.691458	0.690689
Methylcyclohexane		7.48256	4.00496	5.67110	4.00496	4.00056
1,1,2-Trimethylcyclopentane		0.435746	0.158500	0.326295	0.158500	0.158286
Toluene		4.68852	31.7546	3.53871	31.7546	31.7744
2-Methylheptane		2.59340	0.375806	1.92064	0.375806	0.375279
3-Methylheptane		0.384231	0.0607006	0.284149	0.0607006	0.0606140
1,1-Dimethylcyclohexane		1.41540	0.389441	1.05084	0.389441	0.388883
n-Octane		1.67103	0.225737	1.22984	0.225737	0.225401
Ethylbenzene		0.494888	1.54808	0.363483	1.54808	1.54638
m-Xylene		0.700664	2.03076	0.514095	2.03076	2.02863
p-Xylene		0.695201	1.98815	0.510317	1.98815	1.98607
o-Xylene		0.358407	1.22243	0.262692	1.22243	1.22151
n-Nonane		3.80075	0.248925	2.77072	0.248925	0.248525
n-Decane		1.31895	0.0452234	0.958752	0.0452234	0.0451483
TEG		0	2.08250E-05	0	2.08250E-05	3.73056E-06
Water		0.00120561	0.362944	0.00304157	0.362944	0.146782
Methanol		0	0	0	0	0
Molar Flow		lbmol/h	lbmol/h	lbmol/h	lbmol/h	lbmol/h
H2S		4.11400E-06	0.000353880	1.63616E-05	0.000353880	0.000369119
Nitrogen		2.28186E-07	1.71257E-08	6.27927E-07	1.71257E-08	4.67398E-08
Methane		0.000110950	5.90806E-05	0.000366225	5.90806E-05	9.37964E-05
CO2		2.71142E-05	0.000535129	0.000105958	0.000535129	0.000546348
Ethane		0.000666655	0.000603235	0.00268878	0.000603235	0.000681100
Propane		0.00394419	0.00263855	0.0143135	0.00263855	0.00276549
i-Butane		0.00262514	0.000964301	0.00710801	0.000964301	0.000986703
n-Butane		0.0125247	0.00654383	0.0284353	0.00654383	0.00664957
i-Pentane		0.0107960	0.00532792	0.0171101	0.00532792	0.00536015
n-Pentane		0.0156836	0.00876780	0.0227157	0.00876780	0.00880937
Neohexane		0.000208576	0.000104557	0.000268041	0.000104557	0.000104889
Cyclopentane		0.00210843	0.00856246	0.00274335	0.00856246	0.00858734
2-Methylpentane		0.00709119	0.00389187	0.00849653	0.00389187	0.00390099
3-Methylpentane		0.00450646	0.00311575	0.00529777	0.00311575	0.00312239
n-Hexane		0.0114061	0.00630333	0.0129995	0.00630333	0.00631417
Methylcyclopentane		0.00581715	0.0146807	0.00662764	0.0146807	0.0147049
Benzene		0.00427308	0.112530	0.00484326	0.112530	0.113122
Cyclohexane		0.0100557	0.0236295	0.0110656	0.0236295	0.0236600
2-Methylhexane		0.00262245	0.00131483	0.00279387	0.00131483	0.00131593
3-Methylhexane		0.00435720	0.00266537	0.00461194	0.00266537	0.00266734
1,1-Dimethylcyclopentane		0.00463301	0.0100129	0.00497129	0.0100129	0.0100207
n-Heptane		0.00494266	0.00267810	0.00516227	0.00267810	0.00267966
Methylcyclohexane		0.0109675	0.0155117	0.0114513	0.0155117	0.0155210
1,1,2-Trimethylcyclopentane		0.000638690	0.000613890	0.000658869	0.000613890	0.000614099
Toluene		0.00687216	0.122989	0.00714552	0.122989	0.123275
2-Methylheptane		0.00380125	0.00145554	0.00387823	0.00145554	0.00145597
3-Methylheptane		0.000563182	0.000235101	0.000573766	0.000235101	0.000235164
1,1-Dimethylcyclohexane		0.00207460	0.00150835	0.00212191	0.00150835	0.00150875
n-Octane		0.00244930	0.000874306	0.00248335	0.000874306	0.000874485
Ethylbenzene		0.000725377	0.00599590	0.000733959	0.00599590	0.00599950
m-Xylene		0.00102699	0.00786539	0.00103808	0.00786539	0.00787045
p-Xylene		0.00101898	0.00770035	0.00103045	0.00770035	0.00770533
o-Xylene		0.000525331	0.00473462	0.000530438	0.00473462	0.00473907
n-Nonane		0.00557091	0.000964116	0.00559476	0.000964116	0.000964199
n-Decane		0.00193324	0.000175156	0.00193595	0.000175156	0.000175162
TEG		0	8.06580E-08	0	8.06580E-08	1.44734E-08
Water		1.76712E-06	0.00140573	6.14166E-06	0.00140573	0.000569467
Methanol		0	0	0	0	0
Mass Fraction		%	%	%	%	%
H2S		0.00111384	0.0361124	0.00347738	0.0361124	0.0375632
Nitrogen		5.07812E-05	1.43649E-06	0.000109696	1.43649E-06	3.90966E-06
Methane		0.0141398	0.00283795	0.0366381	0.00283795	0.00449307
CO2		0.00947961	0.0705170	0.0290801	0.0705170	0.0717963
Ethane		0.159246	0.0543119	0.504184	0.0543119	0.0611528
Propane		1.38166	0.348377	3.93600	0.348377	0.364128
i-Butane		1.21211	0.167820	2.57635	0.167820	0.171244
n-Butane		5.78304	1.13884	10.3066	1.13884	1.15404
i-Pentane		6.18784	1.15100	7.69831	1.15100	1.15476
n-Pentane		8.98922	1.89413	10.2204	1.89413	1.89784
Neohexane		0.142789	0.0269789	0.144045	0.0269789	0.0269897
Cyclopentane		1.17470	1.79808	1.19983	1.79808	1.79832
2-Methylpentane		4.85456	1.00422	4.56604	1.00422	1.00379
3-Methylpentane		3.08508	0.803961	2.84702	0.803961	0.803444

n-Hexane		7.80850	1.62646	6.98596	1.62646	1.62475
Methylcyclopentane		3.88920	3.69946	3.47838	3.69946	3.69532
Benzene		2.65158	26.3192	2.35923	26.3192	26.3845
Cyclohexane		6.72300	5.95453	5.80753	5.95453	5.94571
2-Methylhexane		2.08752	0.394489	1.74581	0.394489	0.393727
3-Methylhexane		3.46841	0.799694	2.88187	0.799694	0.798070
1,1-Dimethylcyclopentane		3.61377	2.94374	3.04392	2.94374	2.93788
n-Heptane		3.93445	0.803512	3.22576	0.803512	0.801756
Methylcyclohexane		8.55469	4.56036	7.01165	4.56036	4.55045
1,1,2-Trimethylcyclopentane		0.569350	0.206263	0.461058	0.206263	0.205763
Toluene		5.03015	33.9311	4.10572	33.9311	33.9158
2-Methylheptane		3.44944	0.497839	2.76263	0.497839	0.496606
3-Methylheptane		0.511058	0.0804115	0.408718	0.0804115	0.0802105
1,1-Dimethylcyclohexane		1.84937	0.506798	1.48485	0.506798	0.505527
n-Octane		2.22261	0.299039	1.76900	0.299039	0.298272
Ethylbenzene		0.611776	1.90601	0.485924	1.90601	1.90188
m-Xylene		0.866155	2.50029	0.687271	2.50029	2.49498
p-Xylene		0.859401	2.44783	0.682220	2.44783	2.44263
o-Xylene		0.443059	1.50507	0.351181	1.50507	1.50231
n-Nonane		5.67607	0.370249	4.47477	0.370249	0.369256
n-Decane		2.18516	0.0746213	1.71774	0.0746213	0.0744173
TEG		0	3.62684E-05	0	3.62684E-05	6.49007E-06
Water		0.000252903	0.0758283	0.000689989	0.0758283	0.0306334
Methanol		0	0	0	0	0
Mass Flow		**lb/h**	**lb/h**	**lb/h**	**lb/h**	**lb/h**
H2S		0.000140209	0.0120605	0.000557619	0.0120605	0.0125799
Nitrogen		6.39228E-06	4.79749E-07	1.75904E-05	4.79749E-07	1.30934E-06
Methane		0.00177990	0.000947798	0.00587514	0.000947798	0.00150472
CO2		0.00119328	0.0235508	0.00466316	0.0235508	0.0240445
Ethane		0.0200457	0.0181387	0.0808489	0.0181387	0.0204800
Propane		0.173921	0.116348	0.631161	0.116348	0.121946
i-Butane		0.152579	0.0560473	0.413133	0.0560473	0.0573494
n-Butane		0.727962	0.380342	1.65272	0.380342	0.386488
i-Pentane		0.778918	0.384403	1.23447	0.384403	0.386728
n-Pentane		1.13155	0.632586	1.63891	0.632586	0.635586
Neohexane		0.0179741	0.00901021	0.0230985	0.00901021	0.00903884
Cyclopentane		0.147870	0.600510	0.192399	0.600510	0.602255
2-Methylpentane		0.611086	0.335383	0.732192	0.335383	0.336169
3-Methylpentane		0.388346	0.268501	0.456537	0.268501	0.269073
n-Hexane		0.982924	0.543192	1.12024	0.543192	0.544126
Methylcyclopentane		0.489569	1.23552	0.557778	1.23552	1.23756
Benzene		0.333778	8.78990	0.378316	8.78990	8.83614
Cyclohexane		0.846284	1.98865	0.931272	1.98865	1.99121
2-Methylhexane		0.262775	0.131748	0.279951	0.131748	0.131859
3-Methylhexane		0.436600	0.267076	0.462125	0.267076	0.267273
1,1-Dimethylcyclopentane		0.454897	0.983129	0.488111	0.983129	0.983892
n-Heptane		0.495265	0.268351	0.517270	0.268351	0.268507
Methylcyclohexane		1.07685	1.52303	1.12436	1.52303	1.52394
1,1,2-Trimethylcyclopentane		0.0716691	0.0688862	0.0739335	0.0688862	0.0689097
Toluene		0.633190	11.3320	0.658377	11.3320	11.3584
2-Methylheptane		0.434212	0.166264	0.443004	0.166264	0.166313
3-Methylheptane		0.0643314	0.0268552	0.0655404	0.0268552	0.0268624
1,1-Dimethylcyclohexane		0.232797	0.169256	0.238105	0.169256	0.169300
n-Octane		0.279779	0.0998707	0.283670	0.0998707	0.0998911
Ethylbenzene		0.0770096	0.636554	0.0779208	0.636554	0.636936
m-Xylene		0.109031	0.835030	0.110208	0.835030	0.835566
p-Xylene		0.108180	0.817508	0.109398	0.817508	0.818036
o-Xylene		0.0557717	0.502651	0.0563140	0.502651	0.503123
n-Nonane		0.714497	0.123653	0.717557	0.123653	0.123663
n-Decane		0.275065	0.0249215	0.275451	0.0249215	0.0249223
TEG		0	1.21126E-05	0	1.21126E-05	2.17352E-06
Water		3.18351E-05	0.0253246	0.000110644	0.0253246	0.0102591
Methanol		0	0	0	0	0

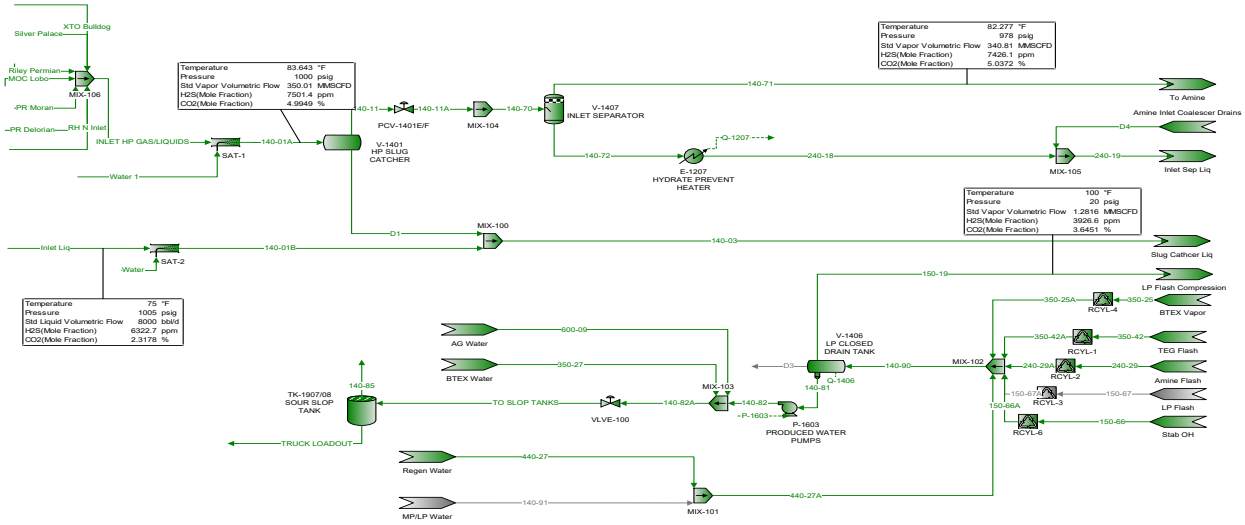
Process Streams		**Condensate Truck Loading**	**From BTEX**	**Produced Water Tank Losses**	**Slop Tank Losses**	**Slop Truck Loading**
Properties	**Status:**	Solved	Solved	Solved	Solved	Solved
Phase: **Nonspecific Liquid**	**From Block:**	**T-300 A**	**LV-104**	**MIX-100**	**MIX-103**	**T-500**
	To Block:	**--**	**MIX-103**	**T-300 A**	**T-500**	**--**
Property	**Units**					
Temperature	°F	75	119.974	19.3552	119.974	75
Pressure	psig	0.5	0.5	0.5	0.5	0.5
Mole Fraction Vapor	%	0	0	0	0	0
Mole Fraction Light Liquid	%	100	100	100	100	100
Mole Fraction Heavy Liquid	%	0	0	0	0	0
Phase Mole Fraction	%	100	2.12254	75.9409	2.12254	2.12614
Molecular Weight	lb/lbmol	85.8808	86.2282	79.4139	86.2282	86.3210
Mass Density	lb/ft^3	43.5442	49.4409	44.0433	49.4409	50.9035
Molar Flow	lbmol/h	0.146574	0.387312	0.201924	0.387312	0.387969
Mass Flow	lb/h	12.5879	33.3972	16.0356	33.3972	33.4899
Vapor Volumetric Flow	ft^3/h	0.289083	0.675498	0.364087	0.675498	0.657910
Liquid Volumetric Flow	gpm	0.0360415	0.0842180	0.0453926	0.0842180	0.0820251
Std Vapor Volumetric Flow	MMSCFD	0.00133494	0.00352749	0.00183905	0.00352749	0.00353348
Std Liquid Volumetric Flow	sgpm	0.0359765	0.0814375	0.0474624	0.0814375	0.0816904
Compressibility		0.00522329	0.00426055	0.00532994	0.00426055	0.00449104
Specific Gravity		0.698174	0.792719	0.706177	0.792719	0.816170
API Gravity		68.9284	40.1143	75.1812	40.1143	40.2246
Enthalpy	Btu/h	-10548.1?	-5783.74	-14568.7?	-5783.74	-6351.88?
Mass Enthalpy	Btu/lb	-837.960?	-173.180	-908.525?	-173.180	-189.665?
Mass Cp	Btu/(lb*°F)	0.492897?	0.439367	0.469873?	0.439367	0.411341?
Ideal Gas CpCv Ratio		1.06860	1.07925	1.08099	1.07925	1.08671
Dynamic Viscosity	cP	0.363516	0.403653	0.432016	0.403653	0.533741
Kinematic Viscosity	cSt	0.521161	0.509683	0.612349	0.509683	0.654579
Thermal Conductivity	Btu/(h*ft*°F)	0.0678688	0.0705567	0.0720533?	0.0705567	0.0745129
Surface Tension	lbf/ft	0.00132245?	0.00153139?	0.00146608?	0.00153139?	0.00172206?
Net Ideal Gas Heating Value	Btu/ft^3	4308.04	4086.11	4003.66	4086.11	4092.35
Net Liquid Heating Value	Btu/lb	18918.8	17827.1	19007.8	17827.1	17835.5
Gross Ideal Gas Heating Value	Btu/ft^3	4631.45	4313.22	4309.89	4313.22	4319.70
Gross Liquid Heating Value	Btu/lb	20348.0	18826.0	20471.3	18826.0	18834.5

Process Streams		Condensate Truck Loading	From BTEX	Produced Water Tank Losses	Slop Tank Losses	Slop Truck Loading
Composition	Status:	Solved	Solved	Solved	Solved	Solved
Phase: Aqueous Liquid	From Block:	T-300 A	LV-104	MIX-100	MIX-103	T-500
	To Block:	--	MIX-103	T-300 A	T-500	--
Mole Fraction			%		%	%
H2S			0.00258665		0.00258665	0.00264161
Nitrogen			5.38903E-08		5.38903E-08	1.86396E-07
Methane			9.86483E-05		9.86483E-05	0.000174055
CO2			0.00459378		0.00459378	0.00529410
Ethane			0.000219686		0.000219686	0.000265109
Propane			0.000223406		0.000223406	0.000221499
i-Butane			2.23698E-05		2.23698E-05	2.48161E-05
n-Butane			0.000164243		0.000164243	0.000132849
i-Pentane			3.07992E-05		3.07992E-05	2.57514E-05
n-Pentane			2.22276E-05		2.22276E-05	1.23642E-05
Neohexane			1.18827E-07		1.18827E-07	9.95508E-08
Cyclopentane			0.000107095		0.000107095	8.84082E-05
2-Methylpentane			5.56165E-06		5.56165E-06	3.45589E-06
3-Methylpentane			8.48749E-06		8.48749E-06	5.80451E-06
n-Hexane			3.65719E-06		3.65719E-06	1.95983E-06
Methylcyclopentane			4.86574E-05		4.86574E-05	3.37100E-05
Benzene			0.0156078		0.0156078	0.0128647
Cyclohexane			0.000117320		0.000117320	8.61619E-05
2-Methylhexane			3.25071E-07		3.25071E-07	2.57742E-07
3-Methylhexane			6.44724E-07		6.44724E-07	5.35171E-07
1,1-Dimethylcyclopentane			1.25176E-05		1.25176E-05	1.13887E-05
n-Heptane			3.37055E-07		3.37055E-07	1.79646E-07
Methylcyclohexane			1.67394E-05		1.67394E-05	1.09218E-05
1,1,2-Trimethylcyclopentane			3.51285E-08		3.51285E-08	1.20181E-08
Toluene			0.00451151		0.00451151	0.00312464
2-Methylheptane			7.36834E-08		7.36834E-08	3.76801E-08
3-Methylheptane			8.81864E-09		8.81864E-09	3.59243E-09
1,1-Dimethylcyclohexane			1.41092E-07		1.41092E-07	7.08303E-08
n-Octane			1.93849E-08		1.93849E-08	7.62270E-09
Ethylbenzene			5.24957E-05		5.24957E-05	3.55575E-05
m-Xylene			5.61274E-05		5.61274E-05	3.22947E-05
p-Xylene			5.94196E-05		5.94196E-05	3.60103E-05
o-Xylene			6.88728E-05		6.88728E-05	4.67416E-05
n-Nonane			5.41357E-09		5.41357E-09	3.23275E-09
n-Decane			1.30551E-10		1.30551E-10	5.91135E-11
TEG			0.00125940		0.00125940	0.00125975
Water			99.9701		99.9701	99.9736
Methanol			0		0	0
Molar Flow			lbmol/h		lbmol/h	lbmol/h
H2S			0.000461957		0.000461957	0.000471782
Nitrogen			9.62445E-09		9.62445E-09	3.32897E-08
Methane			1.76179E-05		1.76179E-05	3.10856E-05
CO2			0.000820418		0.000820418	0.000945508
Ethane			3.92344E-05		3.92344E-05	4.73476E-05
Propane			3.98988E-05		3.98988E-05	3.95590E-05
i-Butane			3.99509E-06		3.99509E-06	4.43206E-06
n-Butane			2.93326E-05		2.93326E-05	2.37263E-05
i-Pentane			5.50053E-06		5.50053E-06	4.59911E-06
n-Pentane			3.96969E-06		3.96969E-06	2.20821E-06
Neohexane			2.12217E-08		2.12217E-08	1.77794E-08
Cyclopentane			1.91265E-05		1.91265E-05	1.57894E-05
2-Methylpentane			9.93274E-07		9.93274E-07	6.17210E-07
3-Methylpentane			1.51581E-06		1.51581E-06	1.03667E-06
n-Hexane			6.53149E-07		6.53149E-07	3.50019E-07
Methylcyclopentane			8.68989E-06		8.68989E-06	6.02050E-06
Benzene			0.00278745		0.00278745	0.00229759
Cyclohexane			2.09526E-05		2.09526E-05	1.53882E-05
2-Methylhexane			5.80554E-08		5.80554E-08	4.60318E-08
3-Methylhexane			1.15143E-07		1.15143E-07	9.55797E-08
1,1-Dimethylcyclopentane			2.23555E-06		2.23555E-06	2.03397E-06
n-Heptane			6.01957E-08		6.01957E-08	3.20841E-08
Methylcyclohexane			2.98954E-06		2.98954E-06	1.95059E-06
1,1,2-Trimethylcyclopentane			6.27372E-09		6.27372E-09	2.14639E-09
Toluene			0.000805726		0.000805726	0.000558050
2-Methylheptane			1.31594E-08		1.31594E-08	6.72953E-09
3-Methylheptane			1.57495E-09		1.57495E-09	6.41596E-10
1,1-Dimethylcyclohexane			2.51981E-08		2.51981E-08	1.26500E-08
n-Octane			3.46202E-09		3.46202E-09	1.36139E-09
Ethylbenzene			9.37538E-06		9.37538E-06	6.35044E-06
m-Xylene			1.00240E-05		1.00240E-05	5.76773E-06
p-Xylene			1.06119E-05		1.06119E-05	6.43131E-06
o-Xylene			1.23002E-05		1.23002E-05	8.34789E-06
n-Nonane			9.66828E-10		9.66828E-10	5.77358E-10
n-Decane			2.33155E-11		2.33155E-11	1.05575E-11
TEG			0.000224920		0.000224920	0.000224987
Water			17.8540		17.8540	17.8549
Methanol			0		0	0
Mass Fraction			%		%	%
H2S			0.00488885		0.00488885	0.00499346
Nitrogen			8.37213E-08		8.37213E-08	2.89618E-07
Methane			8.77646E-05		8.77646E-05	0.000154875
CO2			0.0112118		0.0112118	0.0129229
Ethane			0.000366337		0.000366337	0.000442147
Propane			0.000546323		0.000546323	0.000541739
i-Butane			7.21046E-05		7.21046E-05	8.00013E-05
n-Butane			0.000529404		0.000529404	0.000428275
i-Pentane			0.000123233		0.000123233	0.000103051
n-Pentane			8.89365E-05		8.89365E-05	4.94787E-05
Neohexane			5.67880E-07		5.67880E-07	4.75828E-07
Cyclopentane			0.000416534		0.000416534	0.000343904
2-Methylpentane			2.65795E-05		2.65795E-05	1.65183E-05
3-Methylpentane			4.05622E-05		4.05622E-05	2.77441E-05

n-Hexane		1.74779E-05	1.74779E-05	9.36750E-06
Methylcyclopentane		0.000227097	0.000227097	0.000157357
Benzene		0.0676110	0.0676110	0.0557363
Cyclohexane		0.000547565	0.000547565	0.000402199
2-Methylhexane		1.80640E-06	1.80640E-06	1.43246E-06
3-Methylhexane		3.58269E-06	3.58269E-06	2.97434E-06
1,1-Dimethylcyclopentane		6.81599E-05	6.81599E-05	6.20218E-05
n-Heptane		1.87299E-06	1.87299E-06	9.98424E-07
Methylcyclohexane		9.11481E-05	9.11481E-05	5.94791E-05
1,1,2-Trimethylcyclopentane		2.18605E-07	2.18605E-07	7.47998E-08
Toluene		0.0230527	0.0230527	0.0159685
2-Methylheptane		4.66770E-07	4.66770E-07	2.38731E-07
3-Methylheptane		5.58644E-08	5.58644E-08	2.27607E-08
1,1-Dimethylcyclohexane		8.78019E-07	8.78019E-07	4.40842E-07
n-Octane		1.22800E-07	1.22800E-07	4.82954E-08
Ethylbenzene		0.000309075	0.000309075	0.000209380
m-Xylene		0.000330457	0.000330457	0.000190167
p-Xylene		0.000349841	0.000349841	0.000212046
o-Xylene		0.000405497	0.000405497	0.000275237
n-Nonane		3.85051E-08	3.85051E-08	2.29969E-08
n-Decane		1.03012E-09	1.03012E-09	4.66507E-10
TEG		0.0104885	0.0104885	0.0104930
Water		99.8781	99.8781	99.8961
Methanol		0	0	0
Mass Flow		**lb/h**	**lb/h**	**lb/h**
H2S		0.0157439	0.0157439	0.0160787
Nitrogen		2.69614E-07	2.69614E-07	9.32559E-07
Methane		0.000282635	0.000282635	0.000498690
CO2		0.0361062	0.0361062	0.0416113
Ethane		0.00117974	0.00117974	0.00142370
Propane		0.00175936	0.00175936	0.00174438
i-Butane		0.000232204	0.000232204	0.000257601
n-Butane		0.00170488	0.00170488	0.00137903
i-Pentane		0.000396856	0.000396856	0.000331820
n-Pentane		0.000286408	0.000286408	0.000159320
Neohexane		1.82879E-06	1.82879E-06	1.53215E-06
Cyclopentane		0.00134140	0.00134140	0.00110736
2-Methylpentane		8.55957E-05	8.55957E-05	5.31883E-05
3-Methylpentane		0.000130625	0.000130625	8.93351E-05
n-Hexane		5.62854E-05	5.62854E-05	3.01630E-05
Methylcyclopentane		0.000731337	0.000731337	0.000506682
Benzene		0.217732	0.217732	0.179469
Cyclohexane		0.00176336	0.00176336	0.00129506
2-Methylhexane		5.81727E-06	5.81727E-06	4.61248E-06
3-Methylhexane		1.15376E-05	1.15376E-05	9.57727E-06
1,1-Dimethylcyclopentane		0.000219500	0.000219500	0.000199708
n-Heptane		6.03173E-06	6.03173E-06	3.21489E-06
Methylcyclohexane		0.000293531	0.000293531	0.000191521
1,1,2-Trimethylcyclopentane		7.03990E-07	7.03990E-07	2.40852E-07
Toluene		0.0742383	0.0742383	0.0514179
2-Methylheptane		1.50317E-06	1.50317E-06	7.68705E-07
3-Methylheptane		1.79904E-07	1.79904E-07	7.32885E-08
1,1-Dimethylcyclohexane		2.82755E-06	2.82755E-06	1.41950E-06
n-Octane		3.95461E-07	3.95461E-07	1.55509E-07
Ethylbenzene		0.000995337	0.000995337	0.000674195
m-Xylene		0.00106420	0.00106420	0.000612331
p-Xylene		0.00112662	0.00112662	0.000682780
o-Xylene		0.00130585	0.00130585	0.000886254
n-Nonane		1.24001E-07	1.24001E-07	7.40491E-08
n-Decane		3.31737E-09	3.31737E-09	1.50213E-09
TEG		0.0337770	0.0337770	0.0337869
Water		321.645	321.645	321.662
Methanol		0	0	0

Process Streams		**Condensate Truck Loading**	**From BTEX**	**Produced Water Tank Losses**	**Slop Tank Losses**	**Slop Truck Loading**
Properties	**Status:**	Solved	Solved	Solved	Solved	Solved
Phase: **Aqueous Liquid**	**From Block:**	**T-300 A**	**LV-104**	**MIX-100**	**MIX-103**	**T-500**
	To Block:	**--**	**MIX-103**	**T-300 A**	**T-500**	**--**
Property	**Units**					
Temperature	°F		119.974		119.974	75
Pressure	psig		0.5		0.5	0.5
Mole Fraction Vapor	%		0		0	0
Mole Fraction Light Liquid	%		0		0	0
Mole Fraction Heavy Liquid	%		100		100	100
Phase Mole Fraction	%		97.8721		97.8721	97.8739
Molecular Weight	lb/lbmol		18.0319		18.0319	18.0292
Mass Density	lb/ft^3		61.6793		61.6793	62.2387
Molar Flow	lbmol/h		17.8593		17.8593	17.8597
Mass Flow	lb/h		322.037		322.037	321.996
Vapor Volumetric Flow	ft^3/h		5.22115		5.22115	5.17357
Liquid Volumetric Flow	gpm		0.650949		0.650949	0.645016
Std Vapor Volumetric Flow	MMSCFD		0.162656		0.162656	0.162659
Std Liquid Volumetric Flow	sgpm		0.643887		0.643887	0.643791
Compressibility			0.000714174		0.000714174	0.000767177
Specific Gravity			0.988946		0.988946	0.997915
API Gravity			9.98435		9.98435	9.98600
Enthalpy	Btu/h		-2.18066E+06		-2.18066E+06	-2.19497E+06?
Mass Enthalpy	Btu/lb		-6771.46		-6771.46	-6816.75?
Mass Cp	Btu/(lb*°F)		0.977188		0.977188	0.978033?
Ideal Gas CpCv Ratio			1.32716		1.32716	1.32892
Dynamic Viscosity	cP		0.570582		0.570582	0.935016
Kinematic Viscosity	cSt		0.577507		0.577507	0.937859
Thermal Conductivity	Btu/(h*ft*°F)		0.366910		0.366910	0.348887
Surface Tension	lbf/ft		0.00466187		0.00466187	0.00499352?
Net Ideal Gas Heating Value	Btu/ft^3		0.857890		0.857890	0.692920
Net Liquid Heating Value	Btu/lb		-1040.63		-1040.63	-1044.26
Gross Ideal Gas Heating Value	Btu/ft^3		51.1942		51.1942	51.0237
Gross Liquid Heating Value	Btu/lb		18.7041		18.7041	15.1153

COPPERHEAD HIGH PRESSURE INLET / CLOSED DRAIN SYSTEM
311 MMSCFD GAS / 8000 BPD HP SLUG CATCHER CAPACITY



Process Streams		140-01A	350-25
Composition	Status:	Spec	Spec
Phase: Total	From Block:	SAT-1	BTEX Vaser
	To Block:	HP SLUG CA	RCYL-4
Mole Fraction		%	%
H2S		0.750140	1.05989
CO2		4.99483	1.30707
N2		2.16877	0.0294228
Methane		68.3564	10.9805
Ethane		12.4402	15.3370
Propane		6.75351	20.0087
i-Butane		0.849571	3.24836
n-Butane		2.07910	14.1018
i-Pentane		0.479489	4.44694
n-Pentane		0.523989	5.97501
n-Hexane		0.302140	5.08302
n-Heptane		0	0
n-Octane		0.0892261	1.21649
n-Nonane		0.172322	1.31586
n-Decane		0	0
Undecane		0	0
Benzene		0.00965825	3.71718
Toluene		0	0
Ethylbenzene		0	0
m-Xylene		0	0
Water		0.0315869	12.0427
MDEA		0	0.113496
Piperazine		0	5.02024E-07
Phosphoric Acid		0	0
TEG		0	4.37312E-08
O2		0	0
Mass Flow	lb/h	lb/h	lb/h
H2S		288.281	0.0413380
CO2		1919.57	0.0509802
N2		833.466	0.0011758
Methane		26269.6	0.428861
Ethane		4780.80	0.598194
Propane		2595.40	0.780406
i-Butane		326.493	0.126697
n-Butane		799.004	0.550018
i-Pentane		183.885	0.173504
n-Pentane		201.371	0.233045
n-Hexane		116.114	0.198255
n-Heptane		0	0
n-Octane		34.2899	0.0474471
n-Nonane		66.2241	0.0513229
n-Decane		0	0
Undecane		0	0
Benzene		3.71170	0.144982
Toluene		0	0
Ethylbenzene		0	0
m-Xylene		0	0
Water		12.1390	0.469706
MDEA		0	0.00442673
Piperazine		0	1.95806E-08
Phosphoric Acid		0	0
TEG		0	1.70566E-09
O2		0	0
Mass Fraction		%	%
H2S		1.07562	0.778255
CO2		9.24870	1.23936
N2		2.55613	0.0177583
Methane		46.1376	3.80047
Ethane		15.7380	5.03662
Propane		12.5294	19.0093
i-Butane		2.07752	4.06778
n-Butane		5.08418	17.6591
i-Pentane		1.45247	6.91405
n-Pentane		1.59058	9.28794
n-Hexane		1.09546	9.43750
n-Heptane		0	0
n-Octane		0.428816	2.99389
n-Nonane		0.929866	5.63631
n-Decane		0	0
Undecane		0	0
Benzene		0.0317410	6.25579
Toluene		0	0
Ethylbenzene		0	0
m-Xylene		0	0
Water		0.0239415	4.67431
MDEA		0	0.291388
Piperazine		0	9.31663E-07
Phosphoric Acid		0	0
TEG		0	1.41493E-07
O2		0	0
Mass Flow	lb/h	lb/h	lb/h
H2S		9824.88	1.40887
CO2		64479.4	2.24351
N2		23348.2	0.0321477
Methane		421429	6.87588
Ethane		143754	17.9871
Propane		114446	34.4125
i-Butane		18976.5	7.36389
n-Butane		46439.9	31.9953
i-Pentane		13267.1	12.5181
n-Pentane		14528.7	16.8139
n-Hexane		10006.1	17.0847
n-Heptane		0	0
n-Octane		3916.89	5.41982
n-Nonane		8493.58	6.58243
n-Decane		0	0
Undecane		0	0
Benzene		289.928	11.3246
Toluene		0	0
Ethylbenzene		0	0
m-Xylene		0	0
Water		218.687	8.46189
MDEA		0	0.527499
Piperazine		0	1.69859E-06
Phosphoric Acid		0	0
TEG		0	2.56144E-07
O2		0	0

Process Streams		140-01A	350-25
Properties	Status:	Spec	Spec
Phase: Total	From Block:	SAT-1	BTEX Vaser
	To Block:	HP SLUG CA	RCYL-4
Property	Units		
Temperature	°F	83.6426	120
Pressure	psia	1000	20
Mole Fraction Vapor	%	97.4485	97.2426
Mole Fraction Light Liquid	%	2.55147	5.14969
Mole Fraction Heavy Liquid	%	0	7.60771
Molecular Weight	lb/lbmol	23.7682	46.4139
Mass Density	lb/ft^3	5.57502	0.293513
Molar Flow	lbmol/h	38430.4	3.90033
Mass Flow	lb/h	913419	181.029
Vapor Volumetric Flow	ft^3/h	163841	616.764
Liquid Volumetric Flow	cpm	20427.0	76.8958
Std Vapor Volumetric Flow	MMSCFD	350.009	0.0355227
Std Liquid Volumetric Flow	sgpm	4736.90	0.648899
Compressibility		0.740888	0.845216
Specific Gravity			
API Gravity			
Enthalpy	Btu/h	-1.60760E+09	-216156
Mass Enthalpy	Btu/lb	-1759.98	-1194.04
Mass Cp	Btu/(lb*°F)	0.648816	0.453122
Ideal Gas Cp/Cv Ratio		1.23343	1.11398
Dynamic Viscosity	cP		
Kinematic Viscosity	cSt		
Thermal Conductivity	Btu/(ft*F*F)		
Surface Tension	lbf/ft		
Net Ideal Gas Heating Value	Btu/ft^3	1139.01	2243.17
Net Liquid Heating Value	Btu/lb	18111.8	18143.1
Gross Ideal Gas Heating Value	Btu/ft^3	1253.24	2435.24
Gross Liquid Heating Value	Btu/lb	19935.9	19714.1

Process Streams		140-01A	350-25
Composition	Status:	Spec	Spec
Phase: Vapor	From Block:	SAT-1	BTEX Vaser
	To Block:	HP SLUG CA	RCYL-4
Mole Fraction		%	%
H2S		0.742831	1.20969
CO2		5.03559	1.49589
N2		2.21615	0.0337188
Methane		69.4807	12.5958
Ethane		12.3798	17.5265
Propane		6.47802	22.7237
i-Butane		0.774247	3.64661
n-Butane		1.84148	15.7013
i-Pentane		0.385027	4.78998
n-Pentane		0.403886	6.32720
n-Hexane		0.179666	4.69482
n-Heptane		0	0
n-Octane		0.0225844	0.480076
n-Nonane		0.0223240	0.249957
n-Decane		0	0
Undecane		0	0
Benzene		0.00584567	3.41062
Toluene		0	0
Ethylbenzene		0	0
m-Xylene		0	0
Water		0.0318972	5.07691
MDEA		0	0.0380937
Piperazine		0	1.29541E-09
Phosphoric Acid		0	0
TEG		0	1.78214E-12
O2		0	0
Mass Flow	lb/h	lb/h	lb/h
H2S		278.189	0.0411628
CO2		1885.82	0.0509014
N2		829.946	0.00114737
Methane		26020.4	0.428905
Ethane		4636.22	0.596383
Propane		2426.01	0.773229
i-Butane		289.954	0.124085
n-Butane		689.633	0.534277
i-Pentane		144.192	0.162991
n-Pentane		151.255	0.215299
n-Hexane		67.2847	0.159753
n-Heptane		0	0
n-Octane		8.45784	0.0163358
n-Nonane		8.36031	0.00850542
n-Decane		0	0
Undecane		0	0
Benzene		2.18919	0.116055
Toluene		0	0
Ethylbenzene		0	0
m-Xylene		0	0
Water		11.9342	0.172724
MDEA		0	0.00129523
Piperazine		0	4.40735E-11
Phosphoric Acid		0	0
TEG		0	6.06419E-14
O2		0	0
Mass Fraction		%	%
H2S		1.09478	0.892445
CO2		9.58346	1.42509
N2		2.68467	0.0204472
Methane		48.2015	4.37416
Ethane		16.0975	11.4080
Propane		12.3527	21.6905
i-Butane		1.94602	4.58864
n-Butane		4.62845	19.7549
i-Pentane		1.20128	7.48098
n-Pentane		1.26012	9.88182
n-Hexane		0.669538	8.75785
n-Heptane		0	0
n-Octane		0.111560	1.18709
n-Nonane		0.123815	0.693963
n-Decane		0	0
Undecane		0	0
Benzene		0.0197459	5.76695
Toluene		0	0
Ethylbenzene		0	0
m-Xylene		0	0
Water		0.0248262	1.97952
MDEA		0	0.0982629
Piperazine		0	2.41538E-09
Phosphoric Acid		0	0
TEG		0	5.73539E-12
O2		0	0
Mass Flow	lb/h	lb/h	lb/h
H2S		9480.93	1.40288
CO2		82994.0	2.24015
N2		23249.8	0.0321416
Methane		417431	6.87588
Ethane		139407	17.9327
Propane		106976	34.0980
i-Butane		16852.8	7.21209

n-Pentane	10912.8	15.5336
n-Hexane	5798.28	13.7668
n-Heptane	0	0
n-Octane	966.126	1.86851
n-Nonane	1072.25	1.09086
n-Decane	0	0
Undecane	0	0
Benzene	171.002	9.06527
Toluene	0	0
Ethylbenzene	0	0
m-Xylene	0	0
Water	214.998	3.11167
MDEA	0	0.154462
Piperazine	0	3.79683E-09
Phosphoric Acid	0	0
TEG	0	9.10677E-12
O2	0	0

Process Streams		140-01A	350-25
Properties	Status:	Actual	Actual
Phase: Vapor	From Block:	SAT-1	BTEX Vapor
	To Block:	HP SLUG CA	RCYL-4
Property	Units		
Temperature	°F	83.6426	120
Pressure	psia	1000	20
Mole Fraction Vapor	%	100	100
Mole Fraction Light Liquid	%	0	0
Mole Fraction Heavy Liquid	%	0	0
Molecular Weight	lb/lbmol	97.4485	87.2426
Mass Density	lb/ft^3	23.1246	46.1860
Molar Flow	lbmol/h	5.33201	0.255083
Mass Flow	lb/h	37449.8	3.40275
Vapor Volumetric Flow	ft^3/h	89933	197.193
Liquid Volumetric Flow	gpm	162418	616.244
Std Vapor Volumetric Flow	MMSCFD	20248.5	76.8304
Std Liquid Volumetric Flow	sgpm	341.079	0.0309909
Compressibility		4559.92	0.585381
Specific Gravity		0.753680	0.967988
API Gravity		0.798433	1.59503
Enthalpy	Btu/h		
Mass Enthalpy	Btu/lb	-1.54884E+09	-164912
Mass Cp	Btu/(lb*°F)	-1788.47	-1049.10
Ideal Gas CpCv Ratio		0.646759	0.425023
Dynamic Viscosity	cP	1.24017	1.11434
Kinematic Viscosity	cSt	0.0136581	0.00918735
Thermal Conductivity	Btu/(h*ft*°F)	0.162265	2.24847
Surface Tension	lb/ft	0.0216959	0.0121941
Net Ideal Gas Heating Value	Btu/ft^3		
Net Liquid Heating Value	Btu/lb	1105.38	2300.09
Gross Ideal Gas Heating Value	Btu/ft^3	18068.8	19722.3
Gross Liquid Heating Value	Btu/lb	1217.17	2495.36
		19904.8	20917.4

Process Streams			
Composition	Status:	140-01A	350-25
Phase: Liquid Liquid	From Block:		
	To Block:	SAT-1	BTEX Vapor
Mole Fraction		HP SLUG CA	RCYL-4
H2S		%	%
CO2		1.02926	0.0838156
N2		3.44213	0.0376278
Methane		0.358965	0.000107642
Ethane		25.4170	0.126344
Propane		14.7456	0.900291
i-Butane		17.2755	3.57187
n-Butane		3.72641	1.30019
i-Pentane		11.1543	7.83627
n-Pentane		4.04811	5.23394
n-Hexane		5.11110	8.83518
n-Heptane		4.97581	18.1659
n-Octane		0	0
n-Nonane		2.63448	15.4895
n-Decane		5.90122	21.3176
Undecane		0	0
Benzene		0	0
Toluene		0.155273	14.3861
Ethylbenzene		0	0
m-Xylene		0	0
Water		0	0
MDEA		0.0208789	0.169385
Piperazine		0	1.54282
Phosphoric Acid		0	1.96834E-09
TEG		0	0
O2		0	1.27128E-09
Mole Flow		0	0
H2S		lbmol/h	lbmol/h
CO2		10.9923	0.000185348
N2		33.7514	7.55774E-05
Methane		3.51979	2.16204E-07
Ethane		246.223	0.000253767
Propane		144.587	0.001800828
i-Butane		169.393	0.00717428
n-Butane		36.5389	0.00261150
i-Pentane		109.372	0.0157386
n-Pentane		39.6932	0.0105126
n-Hexane		50.1163	0.0177459
n-Heptane		48.8289	0.0385017
n-Octane		0	0
n-Nonane		25.8321	0.0311114
n-Decane		57.8838	0.0428175
Undecane		0	0
Benzene		0	0
Toluene		1.52251	0.0289852
Ethylbenzene		0	0
m-Xylene		0	0
Water		0	0
MDEA		0.204725	0.0003402[illegible]
Piperazine		0	0.00309902
Phosphoric Acid		0	3.96535E-12
TEG		0	0
O2		0	2.55342E-12
Mass Fraction		0	0
H2S		%	%
CO2		0.725548	0.0310383
N2		3.13332	0.0119909
Methane		0.207993	3.27649E-05
Ethane		8.43365	0.0220335
Propane		9.17094	0.294148
i-Butane		15.7564	1.71141
n-Butane		4.47986	0.621131
i-Pentane		13.4095	4.94896
n-Pentane		6.04105	4.16318
n-Hexane		7.62736	6.92639
n-Heptane		8.87620	17.9481
n-Octane		0	0
n-Nonane		6.22444	19.2253
n-Decane		15.6548	29.7082
Undecane		0	0
Benzene		0	0
Toluene		0.250867	12.2152
Ethylbenzene		0	0
m-Xylene		0	0
Water		0	0
MDEA		0.00777999	0.0331573
Piperazine		0	1.99776
Phosphoric Acid		0	1.84223E-09
TEG		0	0
O2		0	2.07441E-09
Mass Flow		0	0
H2S		lb/h	lb/h
CO2		343.953	0.00573744
N2		1485.38	0.00332612
Methane		98.6013	6.03666E-06
Ethane		3998.15	0.00407105
Propane		4347.58	0.0543732
i-Butane		7469.50	0.316354
n-Butane		2123.72	0.151766
i-Pentane		6356.93	0.914817
n-Pentane		2863.82	0.758474
n-Hexane		3615.83	1.28035
n-Heptane		4207.85	3.31789
n-Octane		0	0
n-Nonane		2950.76	3.55380
n-Decane		7421.32	5.49156
Undecane		0	0
Benzene		0	0
Toluene		118.926	2.25706
Ethylbenzene		0	0
m-Xylene		0	0
Water		0	0
MDEA		3.68818	0.006129[illegible]
Piperazine		0	0.369286
Phosphoric Acid		0	3.40537E-10
TEG		0	0
O2		0	3.83455E-10
		0	0

Process Streams			
Properties	Status:	140-01A	350-25
Phase: Light Liquid	From Block:		
	To Block:	SAT-1	BTEX Vapor
Property	Units	HP SLUG CA	RCYL-4
Temperature	°F		
Pressure	psia	83.6426	120
Mole Fraction Vapor	%	1000	20
Mole Fraction Light Liquid	%	0	0
Mole Fraction Heavy Liquid	%	100	100
Molecular Weight	lb/lbmol	0	0
Mass Density	lb/ft^3	2.55147	5.14989
Molar Flow	lbmol/h	48.3469	92.0317
Mass Flow	lb/h	33.3006	42.2481
Vapor Volumetric Flow	ft^3/h	980.538	0.200855
Liquid Volumetric Flow	gpm	47406.0	16.4850
Std Vapor Volumetric Flow	MMSCFD	1423.58	0.437018
Std Liquid Volumetric Flow	sgpm	177.485	0.0545652
Compressibility		8.93037	0.00162931
Specific Gravity		176.975	0.0528191
API Gravity		0.252302	0.0116456
Enthalpy	Btu/h	0.533931	0.677263
Mass Enthalpy	Btu/lb	124.283	68.2383
Mass Cp	Btu/(lb*°F)	-5.87641E+07	-15010.7
Ideal Gas CpCv Ratio		-1239.59	-812.044
Dynamic Viscosity	cP	0.631683	0.549438
Kinematic Viscosity	cSt	1.11263	1.05646
Thermal Conductivity	Btu/(h*ft*°F)	0.122517	0.315812
Surface Tension	lb/ft	0.229879	0.459064
Net Ideal Gas Heating Value	Btu/ft^3	0.0607050	0.0672131
Net Liquid Heating Value	Btu/lb	0.000294897	0.00118717
Gross Ideal Gas Heating Value	Btu/ft^3	2423.44	4592.93
Gross Liquid Heating Value	Btu/lb	18879.1	19717.7
		2830.96	4938.80
		20508.2	20198.1

Process Streams			
Composition	Status:		
Phase: Heavy Liquid	From Block:	140-01A	350-25
	To Block:	SAT-1	BTEX Vapor
Mole Fraction		HP SLUG CA	RCYL-4
H2S		%	%
CO2			0.00267442
N2			0.00108562
Methane			7.41760E-07
Ethane			0.000557348
Propane			0.000956275
i-Butane			0.000847821
n-Butane			7.48357E-05
i-Pentane			0.000538931
n-Pentane			9.78931E-05
n-Hexane			7.32013E-05
n-Heptane			3.34654E-05
n-Octane			0
n-Nonane			1.05507E-05
n-Decane			3.25810E-07
Undecane			0
Benzene			0
Toluene			0.0107924
Ethylbenzene			0
m-Xylene			0
Water			0
MDEA			0
Piperazine			99.9717
Phosphoric Acid			0.0180087
TEG			6.58269E-06
O2			0
Mole Flow			5.73946E-07
H2S			0
CO2			lbmol/h
N2			7.53671E-05
Methane			3.22133E-08
Ethane			2.20099E-05

n-Pentane	1.59915E-06
n-Hexane	2.89681E-07
n-Heptane	2.17207E-07
n-Octane	9.91226E-08
n-Nonane	0
n-Decane	3.13068E-09
Undecane	9.66761E-10
Benzene	0
Toluene	0
Ethylbenzene	3.20238E-05
m-Xylene	0
Water	0
MDEA	0
Piperazine	0.296642
Phosphoric Acid	3.14723E-05
TEG	1.95323E-08
O2	0
Mass Fraction	1.70305E-09
H2S	0
CO2	%
N2	0.00505419
Methane	0.00294033
Ethane	1.15223E-06
Propane	0.00049881
i-Butane	0.00159446
n-Butane	0.00207305
i-Pentane	0.00092419
n-Pentane	0.00173594
n-Hexane	0.00035084
n-Heptane	0.00029285
n-Octane	0.00015829
n-Nonane	0
n-Decane	6.68294E-06
Undecane	2.31112E-06
Benzene	0
Toluene	0
Ethylbenzene	0.0467460
m-Xylene	0
Water	0
MDEA	0
Piperazine	99.8884
Phosphoric Acid	0.0700857
TEG	3.14410E-05
O2	0
Mass Flow	4.77940E-06
H2S	0
CO2	lb/h
N2	0.000270456
Methane	0.000141769
Ethane	6.16573E-08
Propane	2.65310E-05
i-Butane	8.53214E-05
n-Butane	0.000110932
i-Pentane	1.29804E-05
n-Pentane	9.29460E-05
n-Hexane	2.09145E-05
n-Heptane	1.56712E-05
n-Octane	8.54192E-06
n-Nonane	0
n-Decane	3.57612E-07
Undecane	1.23992E-07
Benzene	0
Toluene	0
Ethylbenzene	0.00250143
m-Xylene	0
Water	0
MDEA	0
Piperazine	5.34409
Phosphoric Acid	0.00375038
TEG	1.68245E-06
O2	0
	2.55752E-07
	0

Process Streams

Properties Status:

Phase: Heavy Liquid	From Block:	140-01A	350-25
	To Block:	---	---
		SAT-1	BTEX Vapor
Property	Units	HP SLUG CA	RCYL-4
Temperature	°F		120
Pressure	psia		34.6959
Mole Fraction Vapor	%		0
Mole Fraction Light Liquid	%		63.4379
Mole Fraction Heavy Liquid	%		36.5621
Molecular Weight	lb/lbmol		58.3881
Mass Density	lb/ft^3		47.2987
Molar Flow	lbmol/h		0.855491
Mass Flow	lb/h		49.9955
Vapor Volumetric Flow	ft^3/h		1.05607
Liquid Volumetric Flow	com		0.131865
Std Vapor Volumetric Flow	MMSCFD		0.00779148
Std Liquid Volumetric Flow	scom		0.127816
Compressibility			0.00688510
Specific Gravity			0.758372
API Gravity			0.0106987
Enthalpy	Btu/h		0.00156279
Mass Enthalpy	Btu/lb		0.988940
Mass Cp	Btu/(lb*°F)		9.98493
Ideal Gas CpCv Ratio			-362315.9
Dynamic Viscosity	cP		-6771.26
Kinematic Viscosity	cSt		0.978907
Thermal Conductivity	Btu/(h*ft*°F)		1.32697
Surface Tension	lbf/ft		0.571447
Net Ideal Gas Heating Value	Btu/ft^3		0.578387
Net Liquid Heating Value	Btu/lb		0.365936
Gross Ideal Gas Heating Value	Btu/ft^3		0.00466598
Gross Liquid Heating Value	Btu/lb		0.849840
			-1040.84
			51.2035
			18.7582

Process Streams

Composition Status:

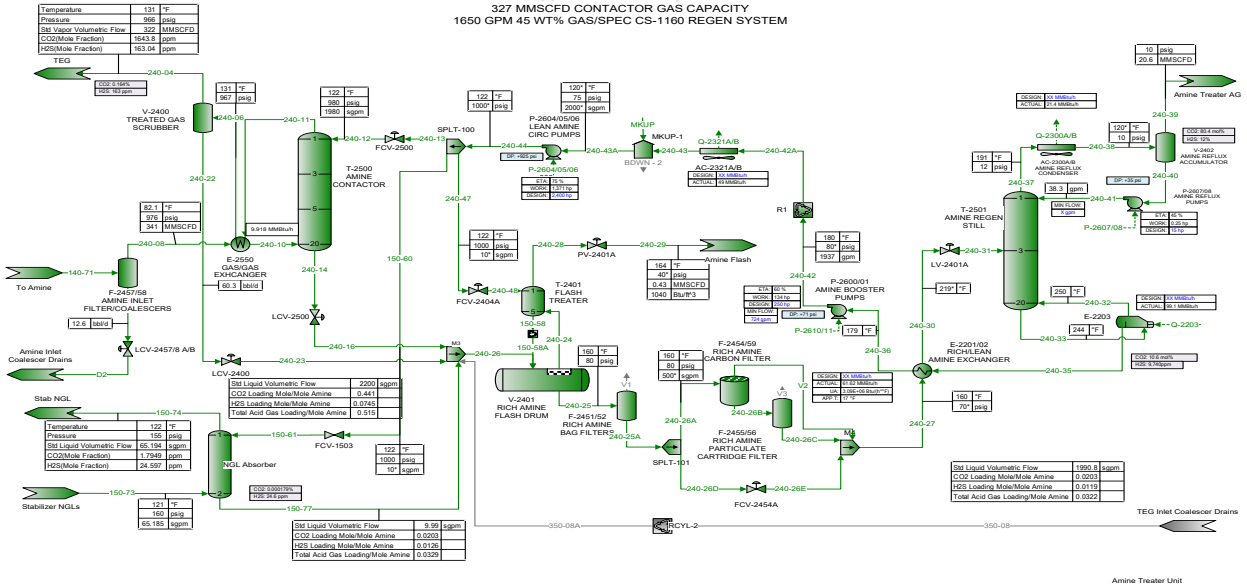
Phase: Mixed Liquid	From Block:	---	BTEX Vapor
	To Block:	SAT-1	RCYL-4
Mole Fraction			%
H2S			0.000542269
CO2			3.47673E-08
N2			1.55773E-05
Methane			0.0507159
Ethane			0.468504
Propane			2.07948
i-Butane			0.762815
n-Butane			5.33176
i-Pentane			3.33465
n-Pentane			5.23471
n-Hexane			2.89691
n-Heptane			5.18123
n-Octane			0.743579
n-Nonane			1.58459
n-Decane			0.00252215
Undecane			0.00673989
Benzene			19.3045
Toluene			14.0356
Ethylbenzene			0.756484
m-Xylene			1.48402
Water			36.7358
MDEA			0.00269111
Piperazine			1.29097E-05
Phosphoric Acid			0
TEG			2.11204E-07
O2			0
Mass Flow			lbmol/h
H2S			4.64522E-06
CO2			2.97431E-10
N2			1.33266E-07
Methane			0.000433927
Ethane			0.00400851
Propane			0.017788
i-Butane			0.00652581
n-Butane			0.0456127
i-Pentane			0.0285276
n-Pentane			0.0447825
n-Hexane			0.0247899
n-Heptane			0.0443250
n-Octane			0.00636125
n-Nonane			0.013556
n-Decane			2.15768E-05
Undecane			5.76592E-05
Benzene			0.165148
Toluene			0.120073
Ethylbenzene			0.00647355
m-Xylene			0.0126957
Water			0.314272
MDEA			2.30632E-05
Piperazine			1.10442E-07
Phosphoric Acid			0
TEG			1.80683E-09
O2			0
Mass Fraction			%
H2S			0.000316940
CO2			2.62655E-09
N2			7.47385E-06
Methane			0.0139331
Ethane			0.241273
Propane			1.57046
i-Butane			0.759349
n-Butane			5.30747
i-Pentane			4.12054
n-Pentane			6.46841
n-Hexane			4.27851
n-Heptane			8.89169
n-Octane			1.45471
n-Nonane			3.48071
n-Decane			0.0061465
Undecane			0.0180431
Benzene			25.8256
Toluene			22.1487
Ethylbenzene			1.37549
m-Xylene			2.69835
Water			11.3346
MDEA			0.00571668
Piperazine			1.90447E-05
Phosphoric Acid			0
TEG			5.43212E-07
O2			0
Mass Flow			lb/h
H2S			0.000158313
CO2			1.30899E-08
N2			3.73323E-06
Methane			0.00695985
Ethane			0.120517
Propane			0.784452
i-Butane			0.379264
n-Butane			2.65111
i-Pentane			2.05823
n-Pentane			3.23100
n-Hexane			2.13714
n-Heptane			4.44145
n-Octane			0.726026
n-Nonane			1.73863
n-Decane			0.00306998
Undecane			0.00901266
Benzene			12.9000
Toluene			11.0634
Ethylbenzene			0.687063
m-Xylene			1.34784
Water			5.66169
MDEA			0.00285551
Piperazine			9.51295E-06
Phosphoric Acid			0
TEG			2.71337E-07
O2			0

Process Streams HP Inlet 1

Properties Status: Solved

Phase: Mixed Liquid	From Block:	---	BTEX Vapor
	To Block:	SAT-1	RCYL-4
Property	Units		
Temperature	°F		120
Pressure	psia		34.6959
Mole Fraction Vapor	%		0
Mole Fraction Light Liquid	%		63.4379
Mole Fraction Heavy Liquid	%		36.5621
Molecular Weight	lb/lbmol		58.3881
Mass Density	lb/ft^3		47.2987
Molar Flow	lbmol/h		0.855491
Mass Flow	lb/h		49.9955
Vapor Volumetric Flow	ft^3/h		1.05607
Liquid Volumetric Flow	com		0.131865
Std Vapor Volumetric Flow	MMSCFD		0.00779148
Std Liquid Volumetric Flow	scom		0.127816
Compressibility			0.00688510
Specific Gravity			0.758372

COPPERHEAD AMINE UNIT
327 MMSCFD CONTACTOR GAS CAPACITY
1650 GPM 45 WT% GAS/SPEC CS-1160 REGEN SYSTEM



Process Streams		240-14	240-10	240-11	240-39	150-73	240-38	150-58A
Composition	Status:	Solved	Solved	Solved	Solved	Solved	Solved	Solved
Phase: Total	From Block:	0 AMINE CONTA	GAS/GAS EXHC	) AMINE CONTA	MINE REFLUX ACCUM	Stabilizer NGLs	AMINE REFLUX	RCYL-1
	To Block:	LCV-2500	) AMINE CONTA	GAS/GAS EXHC	Amine Treater AG	NGL Absorber	IE REFLUX ACC	CH AMINE FLASH DRUM
Mole Fraction		%	%	%	%	%	%	%
H2S		0.973794	0.742598	0.0163378	11.9957	0.00687025	8.20065	0.909494
CO2		5.75590	5.03727	0.164752	80.4428	2.89430E-05	54.9590	4.32118
N2		0.00118918	2.21784	2.34258	0.000524000	4.92841E-12	0.000357880	3.56618E-05
Methane		0.0990568	69.5229	73.3750	0.128402	6.41568E-07	0.0876965	0.0100366
Ethane		0.0197214	12.3779	13.0618	0.0359459	0.0372703	0.0245504	0.00294001
Propane		0.00675157	6.46698	6.82762	0.0103725	14.8262	0.00708425	0.000878879
i-Butane		0.000519608	0.771031	0.814296	0.000654115	9.86972	0.000446746	5.94290E-05
n-Butane		0.00171933	1.83134	1.93365	0.00297106	33.5246	0.00202917	0.000250878
i-Pentane		0.000133010	0.380986	0.402480	0.000113721	11.8775	7.76685E-05	8.66049E-06
n-Pentane		0.000183805	0.398779	0.421236	0.000202067	13.2146	0.000138007	1.61016E-05
n-Hexane		4.87390E-05	0.174884	0.184762	4.11227E-05	13.2760	2.80858E-05	3.65023E-06
n-Heptane		0	0	0	3.89122E-08	2.48811	2.65761E-08	3.00791E-09
n-Octane		2.36231E-06	0.0207704	0.0219468	1.21892E-06	0.536877	8.32488E-07	3.91337E-08
n-Nonane		7.39602E-07	0.0191408	0.0202263	1.67733E-07	0.267340	1.14557E-07	1.41851E-08
n-Decane		0	0	0	0	0.000156077	0	0
Undecane		0	0	0	0	0	0	0
Benzene		0.000318611	0.00570021	0.00572437	0.00428594	0.0745910	0.00293018	0.000323944
Toluene		0	0	0	0	1.28528E-10	0	0
Ethylbenzene		0	0	0	0	0	0	0
m-Xylene		0	0	0	0	0	0	0
Water		80.0778	0.0318797	0.406602	7.37794	6.13920E-07	36.7098	81.5178
MDEA		10.3389	0	0.000452737	3.32717E-09	2.05136E-05	0.00362197	10.4765
Piperazine		2.72394	0	0.000552738	3.60398E-09	1.23448E-08	0.00167167	2.76047
Phosphoric Acid		0	0	0	0	0	0	0
TEG		2.25796E-06	0	0	0	1.32598E-09	0	2.28795E-06
Molar Flow		lbmol/h	lbmol/h	lbmol/h	lbmol/h	lbmol/h	lbmol/h	lbmol/h
H2S		323.919	277.866	5.78500	271.658	0.0208286	271.920	1.50791
CO2		1914.62	1884.85	58.3364	1821.73	8.77465E-05	1822.35	7.16437
N2		0.395564	829.874	829.478	0.0118666	1.49415E-11	0.0118667	5.91261E-05
Methane		32.9499	26014.1	25981.2	2.90783	1.94505E-06	2.90787	0.0166404
Ethane		6.56004	4631.57	4625.01	0.814038	0.112993	0.814051	0.00487443
Propane		2.24582	2419.82	2417.57	0.234899	44.9488	0.234902	0.00145715
i-Butane		0.172841	288.505	288.332	0.0148132	29.9221	0.0148133	9.85312E-05
n-Butane		0.571910	685.252	684.680	0.0672833	101.637	0.0672840	0.000415947
i-Pentane		0.0442439	142.557	142.513	0.00257534	36.0092	0.00257536	1.43588E-05
n-Pentane		0.0611402	149.215	149.154	0.00457606	40.0628	0.00457609	2.66959E-05
n-Hexane		0.0162124	65.4382	65.4220	0.000931275	40.2490	0.000931279	6.05197E-06
n-Heptane		0	0	0	8.81215E-07	7.54323	8.81217E-07	4.98702E-09
n-Octane		0.000785790	7.77187	7.77109	2.76038E-05	1.62765	2.76039E-05	6.48824E-08
n-Nonane		0.000246018	7.16211	7.16186	3.79852E-06	0.810496	3.79853E-06	2.35185E-08
n-Decane		0	0	0	0	0.000473180	0	0
Undecane		0	0	0	0	0	0	0
Benzene		0.105982	2.13291	2.02693	0.0970605	0.226138	0.0971597	0.000537088
Toluene		0	0	0	0	3.89660E-10	0	0
Ethylbenzene		0	0	0	0	0	0	0
m-Xylene		0	0	0	0	0	0	0
Water		26636.8	11.9288	143.973	167.082	1.86122E-06	1217.23	135.154
MDEA		3439.10	0	0.160308	7.53478E-08	6.21911E-05	0.120098	17.3697
Piperazine		906.082	0	0.195718	8.16165E-08	3.74257E-08	0.0554297	4.57677
Phosphoric Acid		0	0	0	0	0	0	0
TEG		0.000751081	0	0	0	4.01997E-09	0	3.79335E-06

Mass Fraction	%	%	%	%	%	%	%
H2S	1.03762	1.09549	0.0253969	10.0051	0.00361194	8.31066	0.975879
CO2	7.91989	9.59591	0.330715	86.6397	1.96492E-05	71.9220	5.98734
N2	0.00104153	2.68931	2.99322	0.000359236	2.12975E-12	0.000298112	3.14524E-05
Methane	0.0496838	48.2773	53.6904	0.0504112	1.58771E-07	0.0418341	0.00506925
Ethane	0.0185403	16.1106	17.9143	0.0264516	0.0172878	0.0219510	0.00278326
Propane	0.00930806	12.3436	13.7323	0.0111935	10.0852	0.00928894	0.00122014
i-Butane	0.000944229	1.93980	2.15875	0.000930421	8.84918	0.000772110	0.000108749
n-Butane	0.00312435	4.60739	5.12622	0.00422607	30.0581	0.00350702	0.000459081
i-Pentane	0.000300035	1.18982	1.32450	0.000200794	13.2194	0.000166629	1.96724E-05
n-Pentane	0.000414616	1.24539	1.38622	0.000356786	14.7075	0.000296079	3.65749E-05
n-Hexane	0.000131316	0.652345	0.726230	8.67258E-05	17.6485	7.19692E-05	9.90351E-06
n-Heptane	0	0	0	9.54213E-08	3.84594	7.91851E-08	9.48914E-09
n-Octane	8.43667E-06	0.102698	0.114347	3.40746E-06	0.946032	2.82767E-06	1.40738E-07
n-Nonane	2.96573E-06	0.106262	0.118323	5.26474E-07	0.528926	4.36892E-07	5.72788E-08
n-Decane	0	0	0	0	0.000342566	0	0
Undecane	0	0	0	0	0	0	0
Benzene	0.000778103	0.0192731	0.0203949	0.00819307	0.0898794	0.00680593	0.000796658
Toluene	0	0	0	0	1.82682E-10	0	0
Ethylbenzene	0	0	0	0	0	0	0
m-Xylene	0	0	0	0	0	0	0
Water	45.1037	0.0248599	0.334109	3.25281	1.70612E-07	19.6652	46.2358
MDEA	38.5188	0	0.00246072	9.70278E-09	3.77082E-05	0.0128339	39.3044
Piperazine	7.33567	0	0.00217160	7.59710E-09	1.64029E-08	0.00428163	7.48603
Phosphoric Acid	0	0	0	0	0	0	0
TEG	1.06015E-05	0	0	0	3.07174E-09	0	1.08174E-05
Mass Flow	**lb/h**	**lb/h**	**lb/h**	**lb/h**	**lb/h**	**lb/h**	**lb/h**
H2S	11039.4	9469.90	197.158	9258.34	0.709857	9267.26	51.3909
CO2	84261.5	82951.3	2567.36	80173.3	0.00386168	80200.6	315.300
N2	11.0811	23247.6	23236.5	0.332424	4.18562E-10	0.332427	0.00165632
Methane	528.597	417330	416802	46.6487	3.12033E-05	46.6494	0.266952
Ethane	197.254	139267	139070	24.4774	3.39758	24.4777	0.146569
Propane	99.0307	106703	106604	10.3580	1982.04	10.3581	0.0642540
i-Butane	10.0459	16768.5	16758.5	0.860978	1739.14	0.860984	0.00572685
n-Butane	33.2407	39828.3	39795.1	3.91065	5907.35	3.91069	0.0241758
i-Pentane	3.19214	10285.3	10282.2	0.185808	2598.02	0.185809	0.00103597
n-Pentane	4.41119	10765.7	10761.3	0.330157	2890.48	0.330159	0.00192608
n-Hexane	1.39711	5639.16	5637.76	0.0802530	3468.47	0.0802533	0.000521530
n-Heptane	0	0	0	8.82995E-05	755.847	8.82997E-05	4.99709E-07
n-Octane	0.0897597	887.769	887.680	0.00315314	185.924	0.00315315	7.41142E-06
n-Nonane	0.0315531	918.577	918.546	0.000487180	103.950	0.000487180	3.01637E-06
n-Decane	0	0	0	0	0.0673249	0	0
Undecane	0	0	0	0	0	0	0
Benzene	8.27842	166.605	158.327	7.58157	17.6641	7.58933	0.0419529
Toluene	0	0	0	0	3.59027E-08	0	0
Ethylbenzene	0	0	0	0	0	0	0
m-Xylene	0	0	0	0	0	0	0
Water	479869	214.900	2593.71	3010.04	3.35305E-05	21928.8	2434.83
MDEA	409810	0	19.1027	8.97861E-06	0.00741082	14.3112	2069.81
Piperazine	78045.9	0	16.8583	7.03009E-06	3.22368E-06	4.77447	394.223
Phosphoric Acid	0	0	0	0	0	0	0
TEG	0.112792	0	0	0	6.03691E-07	0	0.000569658

Process Streams		240-14	240-10	240-11	240-39	150-73	240-38	150-58A
Properties	**Status:**	Solved	Solved	Solved	Solved	Solved	Solved	Solved
Phase: **Total**	**From Block:**	**0 AMINE CONTA**	**GAS/GAS EXHC**	**) AMINE CONTA**	**MINE REFLUX ACCUM**	**Stabilizer NGLs**	**\MINE REFLUX**	**RCYL-1**

	To Block:	LCV-2500	) AMINE CONTA	GAS/GAS EXHC	Amine Treater AG	NGL Absorber	IE REFLUX ACC	CH AMINE FLASH DRUM
Property	**Units**							
Temperature	°F	157.672	100*	149.688	120	121.126	120*	181.073
Pressure	psia	971	971	969	10	160	10	80
Mole Fraction Vapor	%	0	100	100	100	0	68.2973	0
Mole Fraction Light Liquid	%	100	0	0	0	100	31.7027	100
Mole Fraction Heavy Liquid	%	0	0	0	0	0	0	0
Molecular Weight	lb/lbmol	31.9846	23.1023	21.9241	40.8617	64.8252	33.6297	31.7625
Mass Density	lb/ft^3	70.6615	4.80768	3.86224	0.153880	35.6258	0.185337	68.9026
Molar Flow	lbmol/h	33263.6	37418.0	35408.7	2264.62	303.171	3315.83	165.797
Mass Flow	lb/h	1.06392E+06	864444	776306	92536.4	19653.1	111510	5266.12
Vapor Volumetric Flow	ft^3/h	15056.6	179805	200999	601355	551.653	601663	76.4284
Liquid Volumetric Flow	gpm	1877.19	22417.2	25059.6	74974.2	68.7775	75012.5	9.52874
Std Vapor Volumetric Flow	MMSCFD	302.952	340.789	322.489	20.6253	2.76116	30.1993	1.51001
Std Liquid Volumetric Flow	sgpm	2200.26	4554.11	4333.85	225.842	65.1845	263.792	10.8311
Compressibility		0.0672472	0.787463	0.852648	0.992462	0.0505784	0.678171	0.00625144
Specific Gravity		1.13296	0.797664	0.756983	1.41085	0.571213		1.10476
API Gravity		-7.87370				100.544		-5.72188
Enthalpy	Btu/h	-4.27978E+09	-1.53699E+09	-1.21161E+09	-3.27309E+08	-2.04751E+07	-4.55599E+08	-2.11139E+07
Mass Enthalpy	Btu/lb	-4022.64	-1778.01	-1560.74	-3537.08	-1041.83	-4085.71	-4009.39
Mass Cp	Btu/(lb*°F)	0.703040	0.617323	0.619343	0.220630	0.611122	0.352660	0.752133
Ideal Gas CpCv Ratio		1.14573	1.23611	1.22105	1.28542	1.07772	1.29738	1.13969
Dynamic Viscosity	cP	3.12140	0.0137659	0.0137436	0.0158648	0.156816		2.06024
Kinematic Viscosity	cSt	2.75769	0.178751	0.222148	6.43626	0.274793		1.86664
Thermal Conductivity	Btu/(h*ft*°F)	0.176278	0.0218293	0.0236819	0.0106119	0.0569851		0.179515
Surface Tension	lbf/ft	0.00356697?				0.000616484?		0.00323327?
Net Ideal Gas Heating Value	Btu/ft^3	463.897	1104.21	1161.01	72.6560	3341.34	49.8514	468.319
Net Liquid Heating Value	Btu/lb	4867.75	18068.2	20025.2	555.161	19400.2	283.398	4945.62
Gross Ideal Gas Heating Value	Btu/ft^3	545.446	1215.91	1278.71	82.6238	3616.68	72.6127	550.969
Gross Liquid Heating Value	Btu/lb	5835.30	19903.4	22062.9	647.753	21012.3	540.259	5933.08

Process Streams		240-14	240-10	240-11	240-39	150-73	240-38	150-58A
Composition	**Status:**	Solved	Solved	Solved	Solved	Solved	Solved	Solved
Phase: **Vapor**	**From Block:**	0 AMINE CONTA	GAS/GAS EXHC	) AMINE CONTA	MINE REFLUX ACCUM	Stabilizer NGLs	AMINE REFLUX	RCYL-1
	To Block:	LCV-2500	) AMINE CONTA	GAS/GAS EXHC	Amine Treater AG	NGL Absorber	IE REFLUX ACC	CH AMINE FLASH DRUM
Mole Fraction			%	%	%		%	
H2S			0.742598	0.0163378	11.9957		11.9957	
CO2			5.03727	0.164752	80.4428		80.4428	
N2			2.21784	2.34258	0.000524000		0.000524000	
Methane			69.5229	73.3750	0.128402		0.128402	
Ethane			12.3779	13.0618	0.0359459		0.0359459	
Propane			6.46698	6.82762	0.0103725		0.0103725	
i-Butane			0.771031	0.814296	0.000654115		0.000654115	
n-Butane			1.83134	1.93365	0.00297106		0.00297106	
i-Pentane			0.380986	0.402480	0.000113721		0.000113721	
n-Pentane			0.398779	0.421236	0.000202067		0.000202067	
n-Hexane			0.174884	0.184762	4.11227E-05		4.11227E-05	
n-Heptane			0	0	3.89122E-08		3.89122E-08	
n-Octane			0.0207704	0.0219468	1.21892E-06		1.21892E-06	
n-Nonane			0.0191408	0.0202263	1.67733E-07		1.67733E-07	
n-Decane			0	0	0		0	
Undecane			0	0	0		0	
Benzene			0.00570021	0.00572437	0.00428594		0.00428594	
Toluene			0	0	0		0	
Ethylbenzene			0	0	0		0	
m-Xylene			0	0	0		0	

Water	0.0318797	0.406602	7.37794	7.37794
MDEA	0	0.000452737	3.32717E-09	3.32717E-09
Piperazine	0	0.000552738	3.60398E-09	3.60398E-09
Phosphoric Acid	0	0	0	0
TEG	0	0	0	0
Molar Flow	**lbmol/h**	**lbmol/h**	**lbmol/h**	**lbmol/h**
H2S	277.866	5.78500	271.658	271.658
CO2	1884.85	58.3364	1821.73	1821.73
N2	829.874	829.478	0.0118666	0.0118666
Methane	26014.1	25981.2	2.90783	2.90783
Ethane	4631.57	4625.01	0.814038	0.814038
Propane	2419.82	2417.57	0.234899	0.234899
i-Butane	288.505	288.332	0.0148132	0.0148132
n-Butane	685.252	684.680	0.0672833	0.0672833
i-Pentane	142.557	142.513	0.00257534	0.00257534
n-Pentane	149.215	149.154	0.00457606	0.00457606
n-Hexane	65.4382	65.4220	0.000931275	0.000931275
n-Heptane	0	0	8.81215E-07	8.81215E-07
n-Octane	7.77187	7.77109	2.76038E-05	2.76038E-05
n-Nonane	7.16211	7.16186	3.79852E-06	3.79852E-06
n-Decane	0	0	0	0
Undecane	0	0	0	0
Benzene	2.13291	2.02693	0.0970605	0.0970605
Toluene	0	0	0	0
Ethylbenzene	0	0	0	0
m-Xylene	0	0	0	0
Water	11.9288	143.973	167.082	167.082
MDEA	0	0.160308	7.53478E-08	7.53478E-08
Piperazine	0	0.195718	8.16165E-08	8.16165E-08
Phosphoric Acid	0	0	0	0
TEG	0	0	0	0
Mass Fraction	**%**	**%**	**%**	**%**
H2S	1.09549	0.0253969	10.0051	10.0051
CO2	9.59591	0.330715	86.6397	86.6397
N2	2.68931	2.99322	0.000359236	0.000359236
Methane	48.2773	53.6904	0.0504112	0.0504112
Ethane	16.1106	17.9143	0.0264516	0.0264516
Propane	12.3436	13.7323	0.0111935	0.0111935
i-Butane	1.93980	2.15875	0.000930421	0.000930421
n-Butane	4.60739	5.12622	0.00422607	0.00422607
i-Pentane	1.18982	1.32450	0.000200794	0.000200794
n-Pentane	1.24539	1.38622	0.000356786	0.000356786
n-Hexane	0.652345	0.726230	8.67258E-05	8.67258E-05
n-Heptane	0	0	9.54213E-08	9.54213E-08
n-Octane	0.102698	0.114347	3.40746E-06	3.40746E-06
n-Nonane	0.106262	0.118323	5.26474E-07	5.26474E-07
n-Decane	0	0	0	0
Undecane	0	0	0	0
Benzene	0.0192731	0.0203949	0.00819307	0.00819307
Toluene	0	0	0	0
Ethylbenzene	0	0	0	0
m-Xylene	0	0	0	0
Water	0.0248599	0.334109	3.25281	3.25281
MDEA	0	0.00246072	9.70278E-09	9.70278E-09
Piperazine	0	0.00217160	7.59710E-09	7.59710E-09
Phosphoric Acid	0	0	0	0
TEG	0	0	0	0

Mass Flow	lb/h	lb/h	lb/h	lb/h
H2S	9469.90	197.158	9258.34	9258.34
CO2	82951.3	2567.36	80173.3	80173.3
N2	23247.6	23236.5	0.332424	0.332424
Methane	417330	416802	46.6487	46.6487
Ethane	139267	139070	24.4774	24.4774
Propane	106703	106604	10.3580	10.3580
i-Butane	16768.5	16758.5	0.860978	0.860978
n-Butane	39828.3	39795.1	3.91065	3.91065
i-Pentane	10285.3	10282.2	0.185808	0.185808
n-Pentane	10765.7	10761.3	0.330157	0.330157
n-Hexane	5639.16	5637.76	0.0802530	0.0802530
n-Heptane	0	0	8.82995E-05	8.82995E-05
n-Octane	887.769	887.680	0.00315314	0.00315314
n-Nonane	918.577	918.546	0.000487180	0.000487180
n-Decane	0	0	0	0
Undecane	0	0	0	0
Benzene	166.605	158.327	7.58157	7.58157
Toluene	0	0	0	0
Ethylbenzene	0	0	0	0
m-Xylene	0	0	0	0
Water	214.900	2593.71	3010.04	3010.04
MDEA	0	19.1027	8.97861E-06	8.97861E-06
Piperazine	0	16.8583	7.03009E-06	7.03009E-06
Phosphoric Acid	0	0	0	0
TEG	0	0	0	0

Process Streams		240-14	240-10	240-11	240-39	150-73	240-38	150-58A
Properties	Status:	Solved	Solved	Solved	Solved	Solved	Solved	Solved
Phase: Vapor	From Block:	0 AMINE CONTA	GAS/GAS EXHC	) AMINE CONTA	MINE REFLUX ACCUM	Stabilizer NGLs	AMINE REFLUX	RCYL-1
	To Block:	LCV-2500	) AMINE CONTA	GAS/GAS EXHC	Amine Treater AG	NGL Absorber	IE REFLUX ACC	CH AMINE FLASH DRUM
Property	Units							
Temperature	°F	100	149.688	120	120			
Pressure	psia	971	969	10	10			
Mole Fraction Vapor	%	100	100	100	100			
Mole Fraction Light Liquid	%	0	0	0	0			
Mole Fraction Heavy Liquid	%	0	0	0	0			
Molecular Weight	lb/lbmol	100	100	100	68.2973			
Mass Density	lb/ft^3	23.1023	21.9241	40.8617	40.8617			
Molar Flow	lbmol/h	4.80768	3.86224	0.153880	0.153880			
Mass Flow	lb/h	37418.0	35408.7	2264.62	2264.62			
Vapor Volumetric Flow	ft^3/h	864444	776306	92536.4	92536.4			
Liquid Volumetric Flow	gpm	179805	200999	601355	601355			
Std Vapor Volumetric Flow	MMSCFD	22417.2	25059.6	74974.2	74974.2			
Std Liquid Volumetric Flow	sgpm	340.789	322.489	20.6253	20.6253			
Compressibility		4554.11	4333.85	225.842	225.842			
Specific Gravity		0.787463	0.852648	0.992462	0.992462			
API Gravity		0.797664	0.756983	1.41085	1.41085			
Enthalpy	Btu/h							
Mass Enthalpy	Btu/lb	-1.53699E+09	-1.21161E+09	-3.27309E+08	-3.27309E+08			
Mass Cp	Btu/(lb*°F)	-1778.01	-1560.74	-3537.08	-3537.08			
Ideal Gas CpCv Ratio		0.617323	0.619343	0.220630	0.220630			
Dynamic Viscosity	cP	1.23611	1.22105	1.28542	1.28542			
Kinematic Viscosity	cSt	0.0137659	0.0137436	0.0158648	0.0158648			
Thermal Conductivity	Btu/(h*ft*°F)	0.178751	0.222148	6.43626	6.43626			
Surface Tension	lbf/ft	0.0218293	0.0236819	0.0106119	0.0106119			

Net Liquid Heating Value	Btu/lb		1104.21	1161.01	72.6560		72.6560	
Gross Ideal Gas Heating Value	Btu/ft^3		18068.2	20025.2	555.161		555.161	
Gross Liquid Heating Value	Btu/lb		1215.91	1278.71	82.6238		82.6238	
			19903.4	22062.9	647.753		647.753	

Process Streams

Composition	Status:	240-14	240-10	240-11	240-39	150-73	240-38	150-58A
Phase: Light Liquid	From Block:	Solved	Solved	Solved	Solved	Solved	Solved	Solved
	To Block:	0 AMINE CONTA	GAS/GAS EXHC	) AMINE CONTA	MINE REFLUX ACCUM	Stabilizer NGLs	AMINE REFLUX	RCYL-1
Mole Fraction		LCV-2500	) AMINE CONTA	GAS/GAS EXHC	Amine Treater AG	NGL Absorber	IE REFLUX ACC	CH AMINE FLASH DRUM
H2S						%		
CO2						0.00687025		
N2						2.89430E-05		
Methane						4.92841E-12		
Ethane						6.41568E-07		
Propane						0.0372703		
i-Butane						14.8262		
n-Butane						9.86972		
i-Pentane						33.5246		
n-Pentane						11.8775		
n-Hexane						13.2146		
n-Heptane						13.2760		
n-Octane						2.48811		
n-Nonane						0.536877		
n-Decane						0.267340		
Undecane						0.000156077		
Benzene						0		
Toluene						0.0745910		
Ethylbenzene						1.28528E-10		
m-Xylene						0		
Water						0		
MDEA						6.13920E-07		
Piperazine						2.05136E-05		
Phosphoric Acid						1.23448E-08		
TEG						0		
Molar Flow						1.32598E-09		
H2S						lbmol/h		
CO2						0.0208286		
N2						8.77465E-05		
Methane						1.49415E-11		
Ethane						1.94505E-06		
Propane						0.112993		
i-Butane						44.9488		
n-Butane						29.9221		
i-Pentane						101.637		
n-Pentane						36.0092		
n-Hexane						40.0628		
n-Heptane						40.2490		
n-Octane						7.54323		
n-Nonane						1.62765		
n-Decane						0.810496		
Undecane						0.000473180		
Benzene						0		
Toluene						0.226138		
Ethylbenzene						3.89660E-10		
m-Xylene						0		

MDEA	1.86122E-06
Piperazine	6.21911E-05
Phosphoric Acid	3.74257E-08
TEG	0
Mass Fraction	4.01997E-09
H2S	**%**
CO2	0.00361194
N2	1.96492E-05
Methane	2.12975E-12
Ethane	1.58771E-07
Propane	0.0172878
i-Butane	10.0852
n-Butane	8.84918
i-Pentane	30.0581
n-Pentane	13.2194
n-Hexane	14.7075
n-Heptane	17.6485
n-Octane	3.84594
n-Nonane	0.946032
n-Decane	0.528926
Undecane	0.000342566
Benzene	0
Toluene	0.0898794
Ethylbenzene	1.82682E-10
m-Xylene	0
Water	0
MDEA	1.70612E-07
Piperazine	3.77082E-05
Phosphoric Acid	1.64029E-08
TEG	0
Mass Flow	3.07174E-09
H2S	**lb/h**
CO2	0.709857
N2	0.00386168
Methane	4.18562E-10
Ethane	3.12033E-05
Propane	3.39758
i-Butane	1982.04
n-Butane	1739.14
i-Pentane	5907.35
n-Pentane	2598.02
n-Hexane	2890.48
n-Heptane	3468.47
n-Octane	755.847
n-Nonane	185.924
n-Decane	103.950
Undecane	0.0673249
Benzene	0
Toluene	17.6641
Ethylbenzene	3.59027E-08
m-Xylene	0
Water	0
MDEA	3.35305E-05
Piperazine	0.00741082
Phosphoric Acid	3.22368E-06
TEG	0

6.03691E-07

Process Streams

Properties	Status:	240-14	240-10	240-11	240-39	150-73	240-38	150-58A
Phase: Light Liquid	From Block:	Solved	Solved	Solved	Solved	Solved	Solved	Solved
	To Block:	0 AMINE CONTA	GAS/GAS EXHC	) AMINE CONTA	MINE REFLUX ACCUM	Stabilizer NGLs	AMINE REFLUX	RCYL-1
Property	Units	LCV-2500	) AMINE CONTA	GAS/GAS EXHC	Amine Treater AG	NGL Absorber	IE REFLUX ACC	CH AMINE FLASH DRUM
Temperature	°F							
Pressure	psia					121.126		
Mole Fraction Vapor	%					160		
Mole Fraction Light Liquid	%					0		
Mole Fraction Heavy Liquid	%					100		
Molecular Weight	lb/lbmol					0		
Mass Density	lb/ft^3					100		
Molar Flow	lbmol/h					64.8252		
Mass Flow	lb/h					35.6258		
Vapor Volumetric Flow	ft^3/h					303.171		
Liquid Volumetric Flow	gpm					19653.1		
Std Vapor Volumetric Flow	MMSCFD					551.653		
Std Liquid Volumetric Flow	sgpm					68.7775		
Compressibility						2.76116		
Specific Gravity						65.1845		
API Gravity						0.0505784		
Enthalpy	Btu/h					0.571213		
Mass Enthalpy	Btu/lb					100.544		
Mass Cp	Btu/(lb*°F)					-2.04751E+07		
Ideal Gas CpCv Ratio						-1041.83		
Dynamic Viscosity	cP					0.611122		
Kinematic Viscosity	cSt					1.07772		
Thermal Conductivity	Btu/(h*ft*°F)					0.156816		
Surface Tension	lbf/ft					0.274793		
Net Ideal Gas Heating Value	Btu/ft^3					0.0569851		
Net Liquid Heating Value	Btu/lb					0.000616484?		
Gross Ideal Gas Heating Value	Btu/ft^3					3341.34		
Gross Liquid Heating Value	Btu/lb					19400.2		
						3616.68		
						21012.3		

	240-14	240-10	240-11	240-39	150-73	240-38	150-58A
	Solved	Solved	Solved	Solved	Solved	Solved	Solved
T-2500	0 AMINE CONTA	GAS/GAS EXHC	) AMINE CONTA	MINE REFLUX ACCUM	Stabilizer NGLs	AMINE REFLUX	RCYL-1
	LCV-2500	) AMINE CONTA	GAS/GAS EXHC	Amine Treater AG	NGL Absorber	IE REFLUX ACC	CH AMINE FLASH DRUM
	%					%	%
	0.973794					0.0249046	0.909494
	5.75590					0.0589682	4.32118
	0.00118918					7.76027E-09	3.56618E-05
	0.0990568					3.67231E-06	0.0100366
	0.0197214					1.14681E-06	0.00294001
	0.00675157					2.54105E-07	0.000878879
	0.000519608					1.01027E-08	5.94290E-05
	0.00171933					6.91413E-08	0.000250878
	0.000133010					1.33479E-09	8.66049E-06
	0.000183805					2.92780E-09	1.61016E-05
	4.87390E-05					3.37182E-10	3.65023E-06
	0					1.84225E-13	3.00791E-09

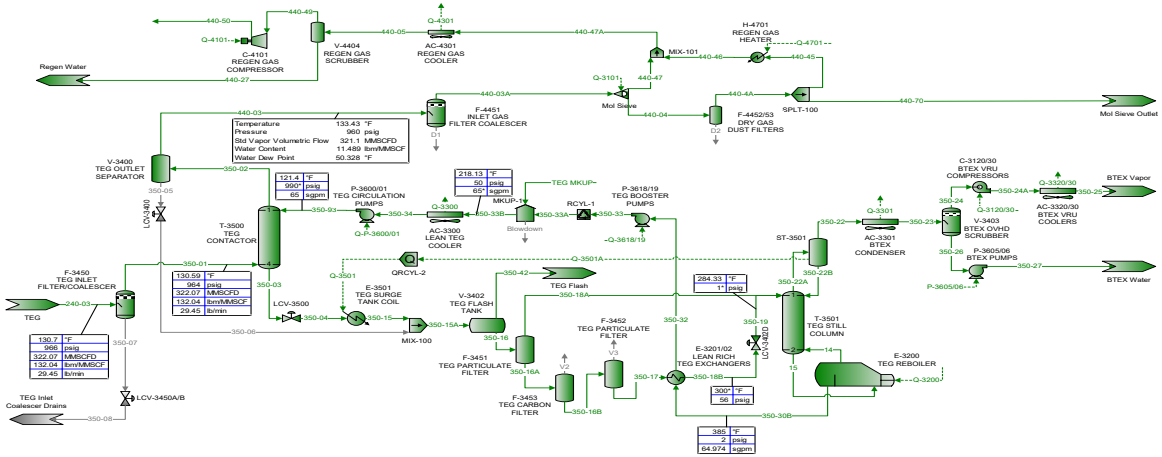
2.36231E-06	4.95645E-12	3.91337E-08
7.39602E-07	2.89776E-13	1.41851E-08
0	0	0
0	0	0
0.000318611	9.44297E-06	0.000323944
0	0	0
0	0	0
0	0	0
80.0778	99.8994	81.5178
10.3389	0.0114248	10.4765
2.72394	0.00527294	2.76047
0	0	0
2.25796E-06	0	2.28795E-06
lbmol/h	**lbmol/h**	**lbmol/h**
323.919	0.261799	1.50791
1914.62	0.619879	7.16437
0.395564	8.15767E-08	5.91261E-05
32.9499	3.86036E-05	0.0166404
6.56004	1.20554E-05	0.00487443
2.24582	2.67117E-06	0.00145715
0.172841	1.06201E-07	9.85312E-05
0.571910	7.26820E-07	0.000415947
0.0442439	1.40314E-08	1.43588E-05
0.0611402	3.07773E-08	2.66959E-05
0.0162124	3.54448E-09	6.05197E-06
0	1.93659E-12	4.98702E-09
0.000785790	5.21026E-11	6.48824E-08
0.000246018	3.04615E-12	2.35185E-08
0	0	0
0	0	0
0.105982	9.92654E-05	0.000537088
0	0	0
0	0	0
0	0	0
26636.8	1050.15	135.154
3439.10	0.120098	17.3697
906.082	0.0554296	4.57677
0	0	0
0.000751081	0	3.79335E-06
%	**%**	**%**
1.03762	0.0470238	0.975879
7.91989	0.143778	5.98734
0.00104153	1.20440E-08	3.14524E-05
0.0496838	3.26392E-06	0.00506925
0.0185403	1.91047E-06	0.00278326
0.00930806	6.20778E-07	0.00122014
0.000944229	3.25319E-08	0.000108749
0.00312435	2.22643E-07	0.000459081
0.000300035	5.33544E-09	1.96724E-05
0.000414616	1.17031E-08	3.65749E-05
0.000131316	1.60981E-09	9.90351E-06
0	1.02271E-12	9.48914E-09
8.43667E-06	3.13671E-11	1.40738E-07
2.96573E-06	2.05905E-12	5.72788E-08
0	0	0
0	0	0
0.000778103	4.08652E-05	0.000796658

0					0	0
0					0	0
0					0	0
45.1037					99.7086	46.2358
38.5188					0.0754249	39.3044
7.33567					0.0251631	7.48603
0					0	0
1.06015E-05					0	1.08174E-05
lb/h					lb/h	lb/h
11039.4					8.92233	51.3909
84261.5					27.2806	315.300
11.0811					2.28524E-06	0.00165632
528.597					0.000619298	0.266952
197.254					0.000362494	0.146569
99.0307					0.000117787	0.0642540
10.0459					6.17262E-06	0.00572685
33.2407					4.22444E-05	0.0241758
3.19214					1.01235E-06	0.00103597
4.41119					2.22055E-06	0.00192608
1.39711					3.05447E-07	0.000521530
0					1.94050E-10	4.99709E-07
0.0897597					5.95161E-09	7.41142E-06
0.0315531					3.90685E-10	3.01637E-06
0					0	0
0					0	0
8.27842					0.00775380	0.0419529
0					0	0
0					0	0
0					0	0
479869					18918.8	2434.83
409810					14.3112	2069.81
78045.9					4.77446	394.223
0					0	0
0.112792					0	0.000569658

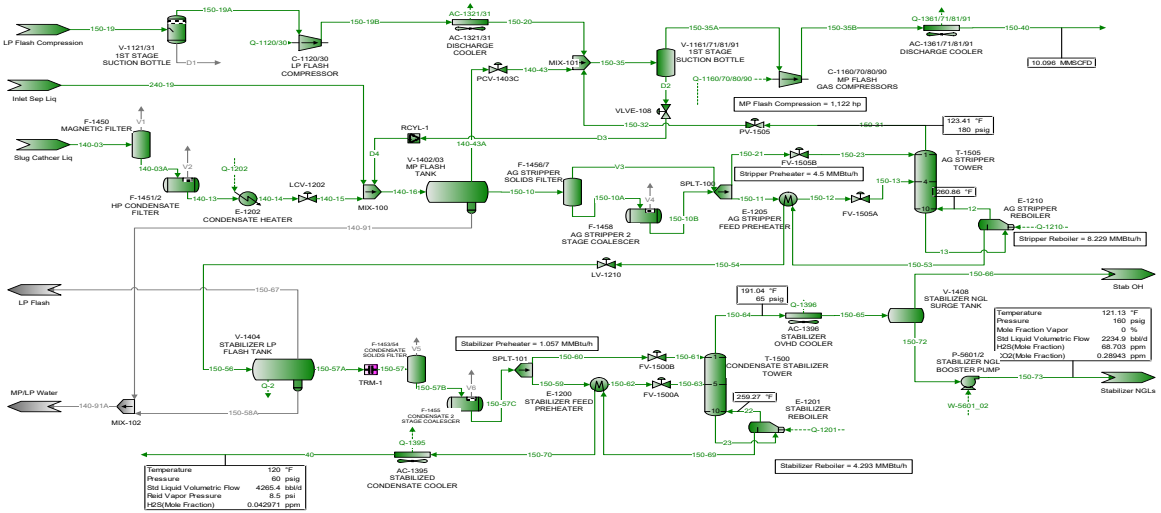
240-14	240-10	240-11	240-39	150-73	240-38	150-58A
Solved	Solved	Solved	Solved	Solved	Solved	Solved
T-2500 AMINE CONTA	GAS/GAS EXHC	AMINE CONTA	MINE REFLUX ACCUM	Stabilizer NGLs	AMINE REFLUX	RCYL-1
LCV-2500	AMINE CONTA	GAS/GAS EXHC	Amine Treater AG	NGL Absorber	IE REFLUX ACC	CH AMINE FLASH DRUM
157.672					120	181.073
971					10	80
0					0	0
100					100	100
0					0	0
100					31.7027	100
31.9846					18.0498	31.7625
70.6615					61.6957	68.9026
33263.6					1051.21	165.797
1.06392E+06					18974.1	5266.12
15056.6					307.543	76.4284
1877.19					38.3430	9.52874
302.952					9.57401	1.51001
2200.26					37.9498	10.8311
0.0672472					0.00109344	0.00625144
1.13296					0.989209	1.10476

-7.87370		9.94053	-5.72188
-4.27978E+09		-1.28290E+08	-2.11139E+07
-4022.64		-6761.35	-4009.39
0.703040		0.996568	0.752133
1.14573		1.32687	1.13969
3.12140		0.570443	2.06024
2.75769		0.577214	1.86664
0.176278		0.366000	0.179515
0.00356697?		0.00465554	0.00323327?
463.897		0.723216	468.319
4867.75		-1041.99	4945.62
545.446		51.0457	550.969
5835.30		16.0088	5933.08

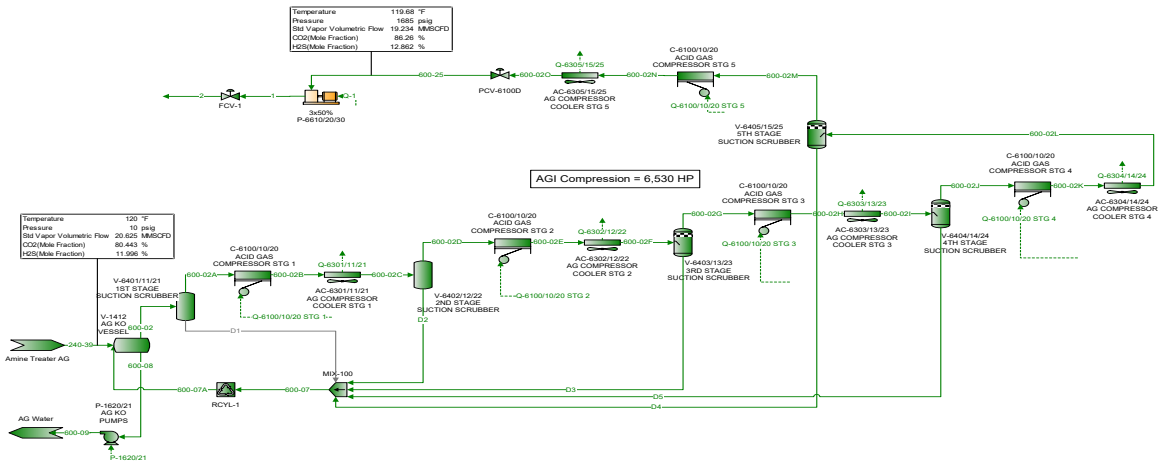
COPPERHEAD TEG UNIT
315 MMSCFD CONTACTOR GAS CAPACITY
65 GPM TEG REGEN SYSTEM



COPPERHEAD ACID GAS STRIPPING & STABILIZER UNITS
8000 BPD STRIPPER/STABILIZER LIQUID CAPACITY



COPPERHEAD ACID GAS COMPRESSION UNIT
COMPRESSORS: 2 STAGE – 5 x 25% UNIT



Process Streams		240-39
Composition	Status:	Solved
Phase: Total	From Block:	Amine Treater AG
	To Block:	V-1412 AG KO VESSEL
Mole Fraction		**%**
H2S		11.9957
CO2		80.4428
N2		0.000524000
Methane		0.128402
Ethane		0.0359459
Propane		0.0103725
i-Butane		0.000654115
n-Butane		0.00297106
i-Pentane		0.000113721
n-Pentane		0.000202067
n-Hexane		4.11227E-05
n-Heptane		3.89122E-08
n-Octane		1.21892E-06
n-Nonane		1.67733E-07
n-Decane		0
Undecane		0
Benzene		0.00428594
Toluene		0
Ethylbenzene		0
m-Xylene		0
Water		7.37794
MDEA		3.32717E-09
Piperazine		3.60398E-09
Phosphoric Acid		0
TEG		0
O2		0
Molar Flow		**lbmol/h**
H2S		271.658
CO2		1821.73
N2		0.0118666
Methane		2.90783
Ethane		0.814038
Propane		0.234899
i-Butane		0.0148132
n-Butane		0.0672833
i-Pentane		0.00257534
n-Pentane		0.00457606
n-Hexane		0.000931275
n-Heptane		8.81215E-07
n-Octane		2.76038E-05
n-Nonane		3.79852E-06
n-Decane		0
Undecane		0
Benzene		0.0970605
Toluene		0
Ethylbenzene		0
m-Xylene		0
Water		167.082
MDEA		7.53478E-08
Piperazine		8.16165E-08
Phosphoric Acid		0
TEG		0
O2		0

Mass Fraction	%
H2S	10.0051
CO2	86.6397
N2	0.000359236
Methane	0.0504112
Ethane	0.0264516
Propane	0.0111935
i-Butane	0.000930421
n-Butane	0.00422607
i-Pentane	0.000200794
n-Pentane	0.000356786
n-Hexane	8.67258E-05
n-Heptane	9.54213E-08
n-Octane	3.40746E-06
n-Nonane	5.26474E-07
n-Decane	0
Undecane	0
Benzene	0.00819307
Toluene	0
Ethylbenzene	0
m-Xylene	0
Water	3.25281
MDEA	9.70278E-09
Piperazine	7.59710E-09
Phosphoric Acid	0
TEG	0
O2	0

Mass Flow	lb/h
H2S	9258.34
CO2	80173.3
N2	0.332424
Methane	46.6487
Ethane	24.4774
Propane	10.3580
i-Butane	0.860978
n-Butane	3.91065
i-Pentane	0.185808
n-Pentane	0.330157
n-Hexane	0.0802530
n-Heptane	8.82995E-05
n-Octane	0.00315314
n-Nonane	0.000487180
n-Decane	0
Undecane	0
Benzene	7.58157
Toluene	0
Ethylbenzene	0
m-Xylene	0
Water	3010.04
MDEA	8.97861E-06
Piperazine	7.03009E-06
Phosphoric Acid	0
TEG	0
O2	0

Process Streams		240-39
Properties	Status:	Solved
Phase: Total	From Block:	Amine Treater AG
	To Block:	V-1412 AG KO VESSEL
Property	Units	
Temperature	°F	120

Pressure	psia	10
Mole Fraction Vapor	%	100
Mole Fraction Light Liquid	%	0
Mole Fraction Heavy Liquid	%	0
Molecular Weight	lb/lbmol	40.8617
Mass Density	lb/ft^3	0.153880
Molar Flow	lbmol/h	2264.62
Mass Flow	lb/h	92536.4
Vapor Volumetric Flow	ft^3/h	601355
Liquid Volumetric Flow	gpm	74974.2
Std Vapor Volumetric Flow	MMSCFD	20.6253
Std Liquid Volumetric Flow	sgpm	225.842
Compressibility		0.992462
Specific Gravity		1.41085
API Gravity		
Enthalpy	Btu/h	-3.27309E+08
Mass Enthalpy	Btu/lb	-3537.08
Mass Cp	Btu/(lb*°F)	0.220630
Ideal Gas CpCv Ratio		1.28542
Dynamic Viscosity	cP	0.0158648
Kinematic Viscosity	cSt	6.43626
Thermal Conductivity	Btu/(h*ft*°F)	0.0106119
Surface Tension	lbf/ft	
Net Ideal Gas Heating Value	Btu/ft^3	72.6560
Net Liquid Heating Value	Btu/lb	555.161
Gross Ideal Gas Heating Value	Btu/ft^3	82.6238
Gross Liquid Heating Value	Btu/lb	647.753

Process Streams		**240-39**
Composition	**Status:**	Solved
Phase: **Vapor**	**From Block:**	**Amine Treater AG**
	To Block:	**V-1412 AG KO VESSEL**
Mole Fraction		**%**
H2S		11.9957
CO2		80.4428
N2		0.000524000
Methane		0.128402
Ethane		0.0359459
Propane		0.0103725
i-Butane		0.000654115
n-Butane		0.00297106
i-Pentane		0.000113721
n-Pentane		0.000202067
n-Hexane		4.11227E-05
n-Heptane		3.89122E-08
n-Octane		1.21892E-06
n-Nonane		1.67733E-07
n-Decane		0
Undecane		0
Benzene		0.00428594
Toluene		0
Ethylbenzene		0
m-Xylene		0
Water		7.37794
MDEA		3.32717E-09
Piperazine		3.60398E-09
Phosphoric Acid		0
TEG		0
O2		0
Molar Flow		**lbmol/h**
H2S		271.658

CO2	1821.73
N2	0.0118666
Methane	2.90783
Ethane	0.814038
Propane	0.234899
i-Butane	0.0148132
n-Butane	0.0672833
i-Pentane	0.00257534
n-Pentane	0.00457606
n-Hexane	0.000931275
n-Heptane	8.81215E-07
n-Octane	2.76038E-05
n-Nonane	3.79852E-06
n-Decane	0
Undecane	0
Benzene	0.0970605
Toluene	0
Ethylbenzene	0
m-Xylene	0
Water	167.082
MDEA	7.53478E-08
Piperazine	8.16165E-08
Phosphoric Acid	0
TEG	0
O2	0
Mass Fraction	**%**
H2S	10.0051
CO2	86.6397
N2	0.000359236
Methane	0.0504112
Ethane	0.0264516
Propane	0.0111935
i-Butane	0.000930421
n-Butane	0.00422607
i-Pentane	0.000200794
n-Pentane	0.000356786
n-Hexane	8.67258E-05
n-Heptane	9.54213E-08
n-Octane	3.40746E-06
n-Nonane	5.26474E-07
n-Decane	0
Undecane	0
Benzene	0.00819307
Toluene	0
Ethylbenzene	0
m-Xylene	0
Water	3.25281
MDEA	9.70278E-09
Piperazine	7.59710E-09
Phosphoric Acid	0
TEG	0
O2	0
Mass Flow	**lb/h**
H2S	9258.34
CO2	80173.3
N2	0.332424
Methane	46.6487
Ethane	24.4774
Propane	10.3580
i-Butane	0.860978
n-Butane	3.91065
i-Pentane	0.185808

n-Pentane	0.330157
n-Hexane	0.0802530
n-Heptane	8.82995E-05
n-Octane	0.00315314
n-Nonane	0.000487180
n-Decane	0
Undecane	0
Benzene	7.58157
Toluene	0
Ethylbenzene	0
m-Xylene	0
Water	3010.04
MDEA	8.97861E-06
Piperazine	7.03009E-06
Phosphoric Acid	0
TEG	0
O2	0

Process Streams **240-39**

Properties **Status:** Solved

Phase: **Vapor** **From Block:** **Amine Treater AG**

To Block: **V-1412 AG KO VESSEL**

Property	**Units**	
Temperature	°F	120
Pressure	psia	10
Mole Fraction Vapor	%	100
Mole Fraction Light Liquid	%	0
Mole Fraction Heavy Liquid	%	0
Molecular Weight	lb/lbmol	100
Mass Density	lb/ft^3	40.8617
Molar Flow	lbmol/h	0.153880
Mass Flow	lb/h	2264.62
Vapor Volumetric Flow	ft^3/h	92536.4
Liquid Volumetric Flow	gpm	601355
Std Vapor Volumetric Flow	MMSCFD	74974.2
Std Liquid Volumetric Flow	sgpm	20.6253
Compressibility		225.842
Specific Gravity		0.992462
API Gravity		1.41085
Enthalpy	Btu/h	
Mass Enthalpy	Btu/lb	-3.27309E+08
Mass Cp	Btu/(lb*°F)	-3537.08
Ideal Gas CpCv Ratio		0.220630
Dynamic Viscosity	cP	1.28542
Kinematic Viscosity	cSt	0.0158648
Thermal Conductivity	Btu/(h*ft*°F)	6.43626
Surface Tension	lbf/ft	0.0106119
Net Ideal Gas Heating Value	Btu/ft^3	
Net Liquid Heating Value	Btu/lb	72.6560
Gross Ideal Gas Heating Value	Btu/ft^3	555.161
Gross Liquid Heating Value	Btu/lb	82.6238
		647.753

Process Streams

Composition **Status:** **240-39**

Phase: **Light Liquid** **From Block:** Solved

To Block: **Amine Treater AG**

Mole Fraction	**V-1412 AG KO VESSEL**
H2S	
CO2	

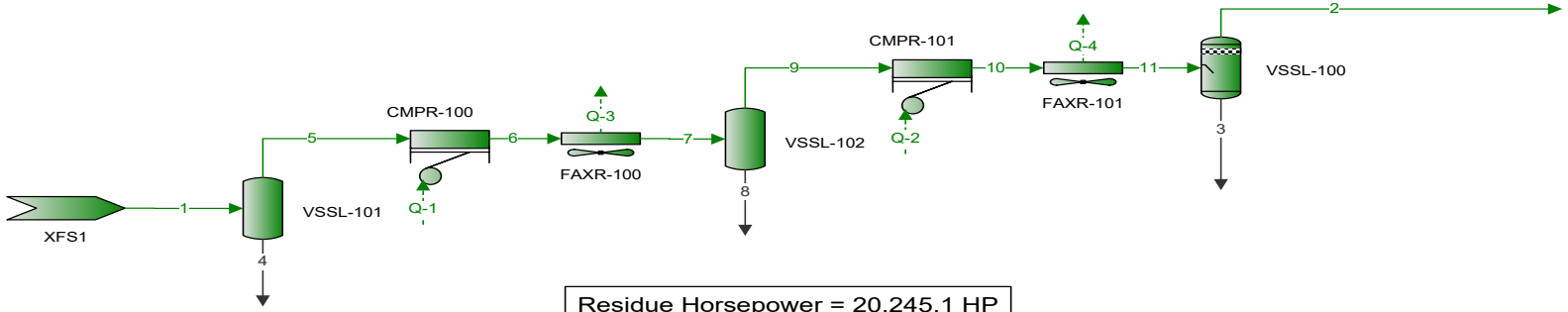
N2	
Methane	
Ethane	
Propane	
i-Butane	
n-Butane	
i-Pentane	
n-Pentane	
n-Hexane	
n-Heptane	
n-Octane	
n-Nonane	
n-Decane	
Undecane	
Benzene	
Toluene	
Ethylbenzene	
m-Xylene	
Water	
MDEA	
Piperazine	
Phosphoric Acid	
TEG	
O2	
Molar Flow	
H2S	
CO2	
N2	
Methane	
Ethane	
Propane	
i-Butane	
n-Butane	
i-Pentane	
n-Pentane	
n-Hexane	
n-Heptane	
n-Octane	
n-Nonane	
n-Decane	
Undecane	
Benzene	
Toluene	
Ethylbenzene	
m-Xylene	
Water	
MDEA	
Piperazine	
Phosphoric Acid	
TEG	
O2	
Mass Fraction	
H2S	
CO2	
N2	
Methane	
Ethane	
Propane	
i-Butane	
n-Butane	
i-Pentane	
n-Pentane	

n-Hexane	
n-Heptane	
n-Octane	
n-Nonane	
n-Decane	
Undecane	
Benzene	
Toluene	
Ethylbenzene	
m-Xylene	
Water	
MDEA	
Piperazine	
Phosphoric Acid	
TEG	
O2	
Mass Flow	
H2S	
CO2	
N2	
Methane	
Ethane	
Propane	
i-Butane	
n-Butane	
i-Pentane	
n-Pentane	
n-Hexane	
n-Heptane	
n-Octane	
n-Nonane	
n-Decane	
Undecane	
Benzene	
Toluene	
Ethylbenzene	
m-Xylene	
Water	
MDEA	
Piperazine	
Phosphoric Acid	
TEG	
O2	

Process Streams

Properties	**Status:**	**240-39**
Phase: **Light Liquid**	**From Block:**	**Solved**
	To Block:	**Amine Treater AG**
Property	**Units**	**V-1412 AG KO VESSEL**
Temperature	°F	
Pressure	psia	
Mole Fraction Vapor	%	
Mole Fraction Light Liquid	%	
Mole Fraction Heavy Liquid	%	
Molecular Weight	lb/lbmol	
Mass Density	lb/ft^3	
Molar Flow	lbmol/h	
Mass Flow	lb/h	
Vapor Volumetric Flow	ft^3/h	
Liquid Volumetric Flow	gpm	

Std Vapor Volumetric Flow	MMSCFD
Std Liquid Volumetric Flow	sgpm
Compressibility	
Specific Gravity	
API Gravity	
Enthalpy	Btu/h
Mass Enthalpy	Btu/lb
Mass Cp	Btu/(lb*°F)
Ideal Gas CpCv Ratio	
Dynamic Viscosity	cP
Kinematic Viscosity	cSt
Thermal Conductivity	Btu/(h*ft*°F)
Surface Tension	lbf/ft
Net Ideal Gas Heating Value	Btu/ft^3
Net Liquid Heating Value	Btu/lb
Gross Ideal Gas Heating Value	Btu/ft^3
Gross Liquid Heating Value	Btu/lb



Residue Horsepower = 20,245.1 HP

=D62

Process Streams		450-70	510-95A
Composition	Status:	Solved	Solved
Phase: Total	From Block:	To Residue	RESIDUE GAS FILTER
	To Block:	1ST STAGE SU	SPLT-100
Mole Fraction		%	%
H2S		0.000421283	0.000421283
CO2		0.115277	0.115277
N2		3.08677	3.08677
Methane		96.5381	96.5381
Ethane		0.259422	0.259422
Propane		8.18955E-07	8.18955E-07
i-Butane		1.58594E-12	1.58594E-12
n-Butane		7.87519E-13	7.87519E-13
i-Pentane		0	0
n-Pentane		0	0
n-Hexane		0	0
n-Heptane		0	0
n-Octane		0	0
n-Nonane		0	0
n-Decane		0	0
Undecane		0	0
Benzene		0	0
Toluene		0	0
Ethylbenzene		0	0
m-Xylene		0	0
Water		0	0
MDEA		0	0
Piperazine		0	0
Phosphoric Acid		0	0
TEG		0	0
O2		0	0
Molar Flow		lbmol/h	lbmol/h
H2S		0.121557	0.121557
CO2		33.2621	33.2621
N2		890.659	890.659
Methane		27855.2	27855.2
Ethane		74.8539	74.8539
Propane		0.000236302	0.000236302
i-Butane		4.57607E-10	4.57607E-10
n-Butane		2.27231E-10	2.27231E-10
i-Pentane		0	0
n-Pentane		0	0
n-Hexane		0	0
n-Heptane		0	0
n-Octane		0	0
n-Nonane		0	0
n-Decane		0	0
Undecane		0	0
Benzene		0	0
Toluene		0	0
Ethylbenzene		0	0
m-Xylene		0	0
Water		0	0
MDEA		0	0
Piperazine		0	0
Phosphoric Acid		0	0
TEG		0	0
O2		0	0
Mass Fraction		%	%
H2S		0.000871183	0.000871183
CO2		0.307832	0.307832
N2		5.24681	5.24681
Methane		93.9712	93.9712
Ethane		0.473316	0.473316
Propane		2.19119E-06	2.19119E-06
i-Butane		5.59310E-12	5.59310E-12
n-Butane		2.77733E-12	2.77733E-12
i-Pentane		0	0
n-Pentane		0	0
n-Hexane		0	0
n-Heptane		0	0
n-Octane		0	0
n-Nonane		0	0
n-Decane		0	0
Undecane		0	0
Benzene		0	0
Toluene		0	0
Ethylbenzene		0	0
m-Xylene		0	0
Water		0	0
MDEA		0	0
Piperazine		0	0
Phosphoric Acid		0	0
TEG		0	0
O2		0	0
Mass Flow		lb/h	lb/h
H2S		4.14278	4.14278
CO2		1463.85	1463.85
N2		24950.4	24950.4
Methane		446866	446866
Ethane		2250.78	2250.78
Propane		0.0104199	0.0104199
i-Butane		2.65971E-08	2.65971E-08
n-Butane		1.32072E-08	1.32072E-08
i-Pentane		0	0
n-Pentane		0	0
n-Hexane		0	0
n-Heptane		0	0
n-Octane		0	0
n-Nonane		0	0
n-Decane		0	0
Undecane		0	0
Benzene		0	0

Toluene	0	0
Ethylbenzene	0	0
m-Xylene	0	0
Water	0	0
MDEA	0	0
Piperazine	0	0
Phosphoric Acid	0	0
TEG	0	0
O2	0	0

Process Streams		450-70	510-95A
Properties	Status:	Solved	Solved
Phase: **Total**	From Block:	To Residue	RESIDUE GAS FILTER
	To Block:	1ST STAGE SU	SPLT-100
Property	**Units**		
Temperature	°F	125	119.804
Pressure	psia	296.661	1230
Mole Fraction Vapor	%	100	100
Mole Fraction Light Liquid	%	0	0
Mole Fraction Heavy Liquid	%	0	0
Molecular Weight	lb/lbmol	16.4807	16.4807
Mass Density	lb/ft^3	0.838931	3.65396
Molar Flow	lbmol/h	28854.1	28854.1
Mass Flow	lb/h	475535	475535
Vapor Volumetric Flow	ft^3/h	566835	130142
Liquid Volumetric Flow	gpm	70670.3	16225.5
Std Vapor Volumetric Flow	MMSCFD	262.792	262.792
Std Liquid Volumetric Flow	sgpm	3057.14	3057.14
Compressibility		0.970313	0.901721
Specific Gravity		0.569035	0.569035
API Gravity			
Enthalpy	Btu/h	-8.94013E+08	-9.07576E+08
Mass Enthalpy	Btu/lb	-1880.02	-1908.54
Mass Cp	Btu/(lb*°F)	0.557360	0.648391
Ideal Gas CpCv Ratio		1.29393	1.29527
Dynamic Viscosity	cP	0.0124825	0.0139397
Kinematic Viscosity	cSt	0.928873	0.238160
Thermal Conductivity	Btu/(h*ft*°F)	0.0222373	0.0255152
Surface Tension	lbf/ft		
Net Ideal Gas Heating Value	Btu/ft^3	882.120	882.120
Net Liquid Heating Value	Btu/lb	20310.7	20310.7
Gross Ideal Gas Heating Value	Btu/ft^3	979.628	979.628
Gross Liquid Heating Value	Btu/lb	22556.0	22556.0

Process Streams		450-70	510-95A
Composition	Status:	Solved	Solved
Phase: **Vapor**	From Block:	To Residue	RESIDUE GAS FILTER
	To Block:	1ST STAGE SU	SPLT-100
Mole Fraction		%	%
H2S		0.000421283	0.000421283
CO2		0.115277	0.115277
N2		3.08677	3.08677
Methane		96.5381	96.5381
Ethane		0.259422	0.259422
Propane		8.18955E-07	8.18955E-07
i-Butane		1.58594E-12	1.58594E-12
n-Butane		7.87519E-13	7.87519E-13
i-Pentane		0	0
n-Pentane		0	0
n-Hexane		0	0
n-Heptane		0	0
n-Octane		0	0
n-Nonane		0	0
n-Decane		0	0
Undecane		0	0
Benzene		0	0
Toluene		0	0
Ethylbenzene		0	0
m-Xylene		0	0
Water		0	0
MDEA		0	0
Piperazine		0	0
Phosphoric Acid		0	0
TEG		0	0
O2		0	0
Molar Flow		lbmol/h	lbmol/h
H2S		0.121557	0.121557
CO2		33.2621	33.2621
N2		890.659	890.659
Methane		27855.2	27855.2
Ethane		74.8539	74.8539
Propane		0.000236302	0.000236302
i-Butane		4.57607E-10	4.57607E-10
n-Butane		2.27231E-10	2.27231E-10
i-Pentane		0	0
n-Pentane		0	0
n-Hexane		0	0
n-Heptane		0	0
n-Octane		0	0
n-Nonane		0	0
n-Decane		0	0
Undecane		0	0
Benzene		0	0
Toluene		0	0
Ethylbenzene		0	0
m-Xylene		0	0
Water		0	0
MDEA		0	0
Piperazine		0	0
Phosphoric Acid		0	0
TEG		0	0

O2	0	0
Mass Fraction	**%**	**%**
H2S	0.000871183	0.000871183
CO2	0.307832	0.307832
N2	5.24681	5.24681
Methane	93.9712	93.9712
Ethane	0.473316	0.473316
Propane	2.19119E-06	2.19119E-06
i-Butane	5.59310E-12	5.59310E-12
n-Butane	2.77733E-12	2.77733E-12
i-Pentane	0	0
n-Pentane	0	0
n-Hexane	0	0
n-Heptane	0	0
n-Octane	0	0
n-Nonane	0	0
n-Decane	0	0
Undecane	0	0
Benzene	0	0
Toluene	0	0
Ethylbenzene	0	0
m-Xylene	0	0
Water	0	0
MDEA	0	0
Piperazine	0	0
Phosphoric Acid	0	0
TEG	0	0
O2	0	0
Mass Flow	**lb/h**	**lb/h**
H2S	4.14278	4.14278
CO2	1463.85	1463.85
N2	24950.4	24950.4
Methane	446866	446866
Ethane	2250.78	2250.78
Propane	0.0104199	0.0104199
i-Butane	2.65971E-08	2.65971E-08
n-Butane	1.32072E-08	1.32072E-08
i-Pentane	0	0
n-Pentane	0	0
n-Hexane	0	0
n-Heptane	0	0
n-Octane	0	0
n-Nonane	0	0
n-Decane	0	0
Undecane	0	0
Benzene	0	0
Toluene	0	0
Ethylbenzene	0	0
m-Xylene	0	0
Water	0	0
MDEA	0	0
Piperazine	0	0
Phosphoric Acid	0	0
TEG	0	0
O2	0	0

Process Streams		**450-70**	**510-95A**
Properties	**Status:**	Solved	Solved
Phase: **Vapor**	**From Block:**	**To Residue**	**RESIDUE GAS FILTER**
	To Block:	**1ST STAGE SU**	**SPLT-100**
Property	**Units**		
Temperature	°F	125	119.804
Pressure	psia	296.661	1230
Mole Fraction Vapor	%	100	100
Mole Fraction Light Liquid	%	0	0
Mole Fraction Heavy Liquid	%	0	0
Molecular Weight	lb/lbmol	100	100
Mass Density	lb/ft^3	16.4807	16.4807
Molar Flow	lbmol/h	0.838931	3.65396
Mass Flow	lb/h	28854.1	28854.1
Vapor Volumetric Flow	ft^3/h	475535	475535
Liquid Volumetric Flow	gpm	566835	130142
Std Vapor Volumetric Flow	MMSCFD	70670.3	16225.5
Std Liquid Volumetric Flow	sgpm	262.792	262.792
Compressibility		3057.14	3057.14
Specific Gravity		0.970313	0.901721
API Gravity		0.569035	0.569035
Enthalpy	Btu/h		
Mass Enthalpy	Btu/lb	-8.94013E+08	-9.07576E+08
Mass Cp	Btu/(lb*°F)	-1880.02	-1908.54
Ideal Gas CpCv Ratio		0.557360	0.648391
Dynamic Viscosity	cP	1.29393	1.29527
Kinematic Viscosity	cSt	0.0124825	0.0139397
Thermal Conductivity	Btu/(h*ft*°F)	0.928873	0.238160
Surface Tension	lbf/ft	0.0222373	0.0255152
Net Ideal Gas Heating Value	Btu/ft^3		
Net Liquid Heating Value	Btu/lb	882.120	882.120
Gross Ideal Gas Heating Value	Btu/ft^3	20310.7	20310.7
Gross Liquid Heating Value	Btu/lb	979.628	979.628
		22556.0	22556.0

Copperhead Gas Plant - Produced Water Tank
Annual & Hourly Worst Case Short Term Emissions
Annual Rate= ~8.8 MMgal/Yr

Annual Emissions

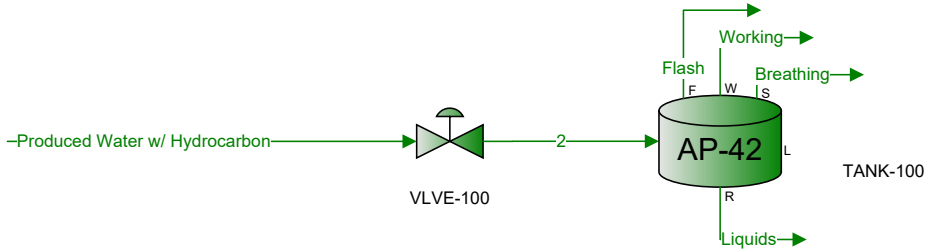
"Flash" VOCs = 47.4 ton/yr

"Breathing" VOCs = 0.3182 ton/yr

"Working" VOCs = 4.975 ton/yr

Hourly Emissions

Names	Units	TANK-100
Worst-Case Flashing Losses	lb/h	183.62
Short-Term Working Losses per Tank	lb/h	7.2047



Names	Units	Produced Water w / Hydrocarbon	2	Flash	Working	Breathing	Liquids
Temperature	°F	97.259*	97.126	73.443	73.443	73.443	73.443
Pressure	psia	19.696*	14.696*	13.26	13.26	13.26	13.26
Std Vapor Volumetric Flow	MMSCFD	4.1771	4.1771	0.019211	0.0016144	0.00010324	4.1562
Std Liquid Volumetric Flow	sgpm	16.7*	16.7	0.236	0.019404	0.0012409	16.443
Gross Ideal Gas Heating Value	Btu/ft^3	52.682	52.682	434.03	363.34	363.34	50.791
Net Ideal Gas Heating Value	Btu/ft^3	2.463	2.463	403.64	343.88	343.88	0.46753

Process Streams		Breathing	Flash	Liquids	Produced Water w/ Hydrocarbon	Working	2
Composition	Status:	Solved	Solved	Solved	Solved	Solved	Solved
Phase: Total	From Block:	TANK-100	TANK-100	TANK-100	--	TANK-100	VLVE-100
	To Block:	--	--	--	VLVE-100	--	TANK-100
Mole Fraction		%	%	%	%	%	%
Water Gas		0	0	0	0*	0	0
Water		4.26803	3.10488	99.9849	99.5*	4.26803	99.5
Methane		0.498967	9.23513	4.59143E-20	0.0426795*	0.498967	0.0426795
Ethane		0.269647	3.29476	2.44962E-20	0.0152642*	0.269647	0.0152642
Propane		0.0684278	1.17731	8.35206E-21	0.00544285*	0.0684278	0.00544285
i-Butane		0.00348920	0.0845441	1.98014E-22	0.000390271*	0.00348920	0.000390271
n-Butane		0.0224010	0.419055	1.58412E-21	0.00193653*	0.0224010	0.00193653
i-Pentane		0.00180106	0.0469286	1.59518E-22	0.000216575*	0.00180106	0.000216575
n-Pentane		0.000346043	0.0230406	1.99398E-23	0.000106111*	0.000346043	0.000106111
Neohexane		0	0	0	0*	0	0
2,3-Dimethylbutane		0	0	0	0*	0	0
2-Methylpentane		0	0	0	0*	0	0
3-Methylpentane		0	0	0	0*	0	0
n-Hexane		4.05999E-05	0.00391737	4.17355E-24	1.80335E-05*	4.05999E-05	1.80335E-05
2,2-Dimethylpentane		0	0	0	0*	0	0
Methylcyclopentane		0	0	0	0*	0	0
2,4-Dimethylpentane		0	0	0	0*	0	0
Benzene		5.56097	3.72917	0.00952839	0.0289185*	5.56097	0.0289185
3,3-Dimethylpentane		0	0	0	0*	0	0
Cyclohexane		0	0	0	0*	0	0
2-Methylhexane		0	0	0	0*	0	0
2,3-Dimethylpentane		0	0	0	0*	0	0
1,1-Dimethylcyclopentane		0	0	0	0*	0	0
3-Methylhexane		0	0	0	0*	0	0
1,t-3-Dimethylcyclopentane		0	0	0	0*	0	0
1,c-3-Dimethylcyclopentane		0	0	0	0*	0	0
2,2,4-Trimethylpentane		0	0	0	0*	0	0
n-Heptane		1.48381E-05	0.00191418	8.97331E-25	8.80980E-06*	1.48381E-05	8.80980E-06
Methylcyclohexane		0	0	0	0*	0	0
1,1,3-Trimethylcyclopentane		0	0	0	0*	0	0
2,5-Dimethylhexane		0	0	0	0*	0	0
2,4-Dimethylhexane		0	0	0	0*	0	0
3,3-Dimethylhexane		0	0	0	0*	0	0
1,t-2,c-3-Trimethylcyclopentane		0	0	0	0*	0	0
2,3,4-Trimethylpentane		0	0	0	0*	0	0
Toluene		2.00064	1.33691	0.00237238	0.00933189*	2.00064	0.00933189
2,3-Dimethylhexane		0	0	0	0*	0	0
1,1,2-Trimethylcyclopentane		0	0	0	0*	0	0
2-Methylheptane		0	0	0	0*	0	0
4-Methylheptane		0	0	0	0*	0	0
3,4-Dimethylhexane		0	0	0	0*	0	0
3-Methylheptane		0	0	0	0*	0	0
3-Ethylhexane		0	0	0	0*	0	0
1,c-3-Dimethylcyclohexane		0	0	0	0*	0	0
1,t-4-Dimethylcyclohexane		0	0	0	0*	0	0
1,1-Dimethylcyclohexane		0	0	0	0*	0	0
2,2,4-Trimethylhexane		0	0	0	0*	0	0
Cycloheptane		0	0	0	0*	0	0
n-Octane		5.80025E-07	0.000176739	4.91965E-26	8.13100E-07*	5.80025E-07	8.13100E-07
1,t-3-Dimethylcyclohexane		0	0	0	0*	0	0
2,2-Dimethylheptane		0	0	0	0*	0	0
2,4-Dimethylheptane		0	0	0	0*	0	0
2,6-Dimethylheptane		0	0	0	0*	0	0
2,5-Dimethylheptane		0	0	0	0*	0	0
Ethylcyclohexane		0	0	0	0*	0	0
3,3-Dimethylheptane		0	0	0	0*	0	0
2,3,4-Trimethylhexane		0	0	0	0*	0	0
Ethylbenzene		0.0705691	0.0485550	7.61804E-05	0.000328131*	0.0705691	0.000328131
2,3-Dimethylheptane		0	0	0	0*	0	0
m-Xylene		0.0936527	0.0623334	4.76363E-05	0.000372591*	0.0936527	0.000372591
p-Xylene		0	0	0	0*	0	0
3,4-Dimethylheptane		0	0	0	0*	0	0
2-Methyloctane		0	0	0	0*	0	0
4-Methyloctane		0	0	0	0*	0	0
3-Methyloctane		0	0	0	0*	0	0
o-Xylene		0	0	0	0*	0	0
1,1,2-Trimethylcyclohexane		0	0	0	0*	0	0
n-Nonane		2.00461E-07	5.75137E-05	1.09540E-26	2.64600E-07*	2.00461E-07	2.64600E-07
Isopropylbenzene		0	0	0	0*	0	0
n-Butylcyclopentane		0	0	0	0*	0	0
n-Propylbenzene		0	0	0	0*	0	0
m-Ethyltoluene		0	0	0	0*	0	0
p-Ethyltoluene		0	0	0	0*	0	0
4-Methylnonane		0	0	0	0*	0	0
2-Methylnonane		0	0	0	0*	0	0
t-Butylbenzene		0	0	0	0*	0	0
Butylcyclohexane		0	0	0	0*	0	0
n-Decane		1.99389E-10	1.95668E-07	1.92855E-29	9.00000E-10*	1.99389E-10	9.00000E-10
Undecane		6.89353E-11	6.52225E-08	4.38871E-30	3.00000E-10*	6.89353E-11	3.00000E-10
Dodecane		0	0	0	0*	0	0
Tridecane		0	0	0	0*	0	0
Nitrogen		0.000772508	0.0294576	5.13551E-23	0.000135799*	0.000772508	0.000135799
Carbon Dioxide		80.4520	73.2229	4.28462E-18	0.369849*	80.4520	0.369849
Hydrogen Sulfide		6.68820	4.17890	0.00304545	0.025*	6.68820	0.025
Molar Flow		lbmol/h	lbmol/h	lbmol/h	lbmol/h	lbmol/h	lbmol/h

Water Gas	0	0	0		0*	0	0
Water	0.000483820	0.0654933	456.271		456.344*	0.00756525	456.344
Methane	5.65624E-05	0.194803	2.09525E-19		0.195744*	0.000884438	0.195744
Ethane	3.05669E-05	0.0694987	1.11786E-19		0.0700072*	0.000477960	0.0700072
Propane	7.75692E-06	0.0248339	3.81137E-20		0.0249630*	0.000121291	0.0249630
i-Butane	3.95533E-07	0.00178335	9.03618E-22		0.00178993*	6.18475E-06	0.00178993
n-Butane	2.53935E-06	0.00883941	7.22895E-21		0.00888166*	3.97066E-05	0.00888166
i-Pentane	2.04167E-07	0.000989898	7.27944E-22		0.000993295*	3.19246E-06	0.000993295
n-Pentane	3.92271E-08	0.000486012	9.09930E-23		0.000486665*	6.13375E-07	0.000486665
Neohexane	0	0	0		0*	0	0
2,3-Dimethylbutane	0	0	0		0*	0	0
2-Methylpentane	0	0	0		0*	0	0
3-Methylpentane	0	0	0		0*	0	0
n-Hexane	4.60237E-09	8.26318E-05	1.90456E-23		8.27084E-05*	7.19650E-08	8.27084E-05
2,2-Dimethylpentane	0	0	0		0*	0	0
Methylcyclopentane	0	0	0		0*	0	0
2,4-Dimethylpentane	0	0	0		0*	0	0
Benzene	0.000630386	0.0786620	0.0434818		0.132631*	0.00985704	0.132631
3,3-Dimethylpentane	0	0	0		0*	0	0
Cyclohexane	0	0	0		0*	0	0
2-Methylhexane	0	0	0		0*	0	0
2,3-Dimethylpentane	0	0	0		0*	0	0
1,1-Dimethylcyclopentane	0	0	0		0*	0	0
3-Methylhexane	0	0	0		0*	0	0
1,t-3-Dimethylcyclopentane	0	0	0		0*	0	0
1,c-3-Dimethylcyclopentane	0	0	0		0*	0	0
2,2,4-Trimethylpentane	0	0	0		0*	0	0
n-Heptane	1.68203E-09	4.03771E-05	4.09488E-24		4.04050E-05*	2.63011E-08	4.04050E-05
Methylcyclohexane	0	0	0		0*	0	0
1,1,3-Trimethylcyclopentane	0	0	0		0*	0	0
2,5-Dimethylhexane	0	0	0		0*	0	0
2,4-Dimethylhexane	0	0	0		0*	0	0
3,3-Dimethylhexane	0	0	0		0*	0	0
1,t-2,c-3-Trimethylcyclopentane	0	0	0		0*	0	0
2,3,4-Trimethylpentane	0	0	0		0*	0	0
Toluene	0.000226790	0.0282004	0.0108261		0.0427995*	0.00354621	0.0427995
2,3-Dimethylhexane	0	0	0		0*	0	0
1,1,2-Trimethylcyclopentane	0	0	0		0*	0	0
2-Methylheptane	0	0	0		0*	0	0
4-Methylheptane	0	0	0		0*	0	0
3,4-Dimethylhexane	0	0	0		0*	0	0
3-Methylheptane	0	0	0		0*	0	0
3-Ethylhexane	0	0	0		0*	0	0
1,c-3-Dimethylcyclohexane	0	0	0		0*	0	0
1,t-4-Dimethylcyclohexane	0	0	0		0*	0	0
1,1-Dimethylcyclohexane	0	0	0		0*	0	0
2,2,4-Trimethylhexane	0	0	0		0*	0	0
Cycloheptane	0	0	0		0*	0	0
n-Octane	6.57511E-11	3.72809E-06	2.24503E-25		3.72918E-06*	1.02812E-09	3.72918E-06
1,t-3-Dimethylcyclohexane	0	0	0		0*	0	0
2,2-Dimethylheptane	0	0	0		0*	0	0
2,4-Dimethylheptane	0	0	0		0*	0	0
2,6-Dimethylheptane	0	0	0		0*	0	0
2,5-Dimethylheptane	0	0	0		0*	0	0
Ethylcyclohexane	0	0	0		0*	0	0
3,3-Dimethylheptane	0	0	0		0*	0	0
2,3,4-Trimethylhexane	0	0	0		0*	0	0
Ethylbenzene	7.99965E-06	0.00102420	0.000347641		0.00150493*	0.000125087	0.00150493
2,3-Dimethylheptane	0	0	0		0*	0	0
m-Xylene	1.06164E-05	0.00131484	0.000217383		0.00170884*	0.000166003	0.00170884
p-Xylene	0	0	0		0*	0	0
3,4-Dimethylheptane	0	0	0		0*	0	0
2-Methyloctane	0	0	0		0*	0	0
4-Methyloctane	0	0	0		0*	0	0
3-Methyloctane	0	0	0		0*	0	0
o-Xylene	0	0	0		0*	0	0
1,1,2-Trimethylcyclohexane	0	0	0		0*	0	0
n-Nonane	2.27241E-11	1.21318E-06	4.99876E-26		1.21355E-06*	3.55325E-10	1.21355E-06
Isopropylbenzene	0	0	0		0*	0	0
n-Butylcyclopentane	0	0	0		0*	0	0
n-Propylbenzene	0	0	0		0*	0	0
m-Ethyltoluene	0	0	0		0*	0	0
p-Ethyltoluene	0	0	0		0*	0	0
4-Methylnonane	0	0	0		0*	0	0
2-Methylnonane	0	0	0		0*	0	0
t-Butylbenzene	0	0	0		0*	0	0
Butylcyclohexane	0	0	0		0*	0	0
n-Decane	2.26026E-14	4.12736E-09	8.80072E-29		4.12774E-09*	3.53426E-13	4.12774E-09
Undecane	7.81444E-15	1.37578E-09	2.00274E-29		1.37591E-09*	1.22190E-13	1.37591E-09
Dodecane	0	0	0		0*	0	0
Tridecane	0	0	0		0*	0	0
Nitrogen	8.75708E-08	0.000621369	2.34353E-22		0.000622826*	1.36930E-06	0.000622826
Carbon Dioxide	0.00911997	1.54454	1.95524E-17		1.69627*	0.142604	1.69627
Hydrogen Sulfide	0.000758168	0.0881485	0.0138976		0.114659*	0.0118551	0.114659
Mass Fraction	**%**	**%**	**%**	**%**		**%**	**%**
Water Gas	0	0	0		0*	0	0
Water	1.70773	1.33754	99.9401		98.7946*	1.70773	98.7946
Methane	0.177784	3.54271	4.08680E-20		0.0377363*	0.177784	0.0377363
Ethane	0.180080	2.36900	4.08680E-20		0.0252966*	0.180080	0.0252966
Propane	0.0670162	1.24139	2.04340E-20		0.0132279*	0.0670162	0.0132279
i-Butane	0.00450422	0.117502	6.38562E-22		0.00125019*	0.00450422	0.00125019
n-Butane	0.0289174	0.582417	5.10850E-21		0.00620348*	0.0289174	0.00620348
i-Pentane	0.00288609	0.0809633	6.38562E-22		0.000861205*	0.00288609	0.000861205

n-Pentane	0.000554511	0.0397507	7.98203E-23	0.000421948*	0.000554511	0.000421948
Neohexane	0	0	0	0*	0	0
2,3-Dimethylbutane	0	0	0	0*	0	0
2-Methylpentane	0	0	0	0*	0	0
3-Methylpentane	0	0	0	0*	0	0
n-Hexane	7.77069E-05	0.00807234	1.99551E-23	8.56510E-05*	7.77069E-05	8.56510E-05
2,2-Dimethylpentane	0	0	0	0*	0	0
Methylcyclopentane	0	0	0	0*	0	0
2,4-Dimethylpentane	0	0	0	0*	0	0
Benzene	9.64758	6.96547	0.0412953	0.124498*	9.64758	0.124498
3,3-Dimethylpentane	0	0	0	0*	0	0
Cyclohexane	0	0	0	0*	0	0
2-Methylhexane	0	0	0	0*	0	0
2,3-Dimethylpentane	0	0	0	0*	0	0
1,1-Dimethylcyclopentane	0	0	0	0*	0	0
3-Methylhexane	0	0	0	0*	0	0
1,t-3-Dimethylcyclopentane	0	0	0	0*	0	0
1,c-3-Dimethylcyclopentane	0	0	0	0*	0	0
2,2,4-Trimethylpentane	0	0	0	0*	0	0
n-Heptane	3.30222E-05	0.00458648	4.98877E-24	4.86532E-05*	3.30222E-05	4.86532E-05
Methylcyclohexane	0	0	0	0*	0	0
1,1,3-Trimethylcyclopentane	0	0	0	0*	0	0
2,5-Dimethylhexane	0	0	0	0*	0	0
2,4-Dimethylhexane	0	0	0	0*	0	0
3,3-Dimethylhexane	0	0	0	0*	0	0
1,t-2,c-3-Trimethylcyclopentane	0	0	0	0*	0	0
2,3,4-Trimethylpentane	0	0	0	0*	0	0
Toluene	4.09412	2.94554	0.0121280	0.0473892*	4.09412	0.0473892
2,3-Dimethylhexane	0	0	0	0*	0	0
1,1,2-Trimethylcyclopentane	0	0	0	0*	0	0
2-Methylheptane	0	0	0	0*	0	0
4-Methylheptane	0	0	0	0*	0	0
3,4-Dimethylhexane	0	0	0	0*	0	0
3-Methylheptane	0	0	0	0*	0	0
3-Ethylhexane	0	0	0	0*	0	0
1,c-3-Dimethylcyclohexane	0	0	0	0*	0	0
1,t-4-Dimethylcyclohexane	0	0	0	0*	0	0
1,1-Dimethylcyclohexane	0	0	0	0*	0	0
2,2,4-Trimethylhexane	0	0	0	0*	0	0
Cycloheptane	0	0	0	0*	0	0
n-Octane	1.47154E-06	0.000482758	3.11798E-25	5.11903E-06*	1.47154E-06	5.11903E-06
1,t-3-Dimethylcyclohexane	0	0	0	0*	0	0
2,2-Dimethylheptane	0	0	0	0*	0	0
2,4-Dimethylheptane	0	0	0	0*	0	0
2,6-Dimethylheptane	0	0	0	0*	0	0
2,5-Dimethylheptane	0	0	0	0*	0	0
Ethylcyclohexane	0	0	0	0*	0	0
3,3-Dimethylheptane	0	0	0	0*	0	0
2,3,4-Trimethylhexane	0	0	0	0*	0	0
Ethylbenzene	0.166398	0.123264	0.000448734	0.00191998*	0.166398	0.00191998
2,3-Dimethylheptane	0	0	0	0*	0	0
m-Xylene	0.220828	0.158243	0.000280597	0.00218013*	0.220828	0.00218013
p-Xylene	0	0	0	0*	0	0
3,4-Dimethylheptane	0	0	0	0*	0	0
2-Methyloctane	0	0	0	0*	0	0
4-Methyloctane	0	0	0	0*	0	0
3-Methyloctane	0	0	0	0*	0	0
o-Xylene	0	0	0	0*	0	0
1,1,2-Trimethylcyclohexane	0	0	0	0*	0	0
n-Nonane	5.71027E-07	0.000176387	7.79495E-26	1.87040E-06*	5.71027E-07	1.87040E-06
Isopropylbenzene	0	0	0	0*	0	0
n-Butylcyclopentane	0	0	0	0*	0	0
n-Propylbenzene	0	0	0	0*	0	0
m-Ethyltoluene	0	0	0	0*	0	0
p-Ethyltoluene	0	0	0	0*	0	0
4-Methylnonane	0	0	0	0*	0	0
2-Methylnonane	0	0	0	0*	0	0
t-Butylbenzene	0	0	0	0*	0	0
Butylcyclohexane	0	0	0	0*	0	0
n-Decane	6.30090E-10	6.65718E-07	1.52245E-28	7.05766E-09*	6.30090E-10	7.05766E-09
Undecane	2.39318E-10	2.43781E-07	3.80613E-29	2.58447E-09*	2.39318E-10	2.58447E-09
Dodecane	0	0	0	0*	0	0
Tridecane	0	0	0	0*	0	0
Nitrogen	0.000480640	0.0197326	7.98203E-23	0.000209668*	0.000480640	0.000209668
Carbon Dioxide	78.6384	77.0575	1.04622E-17	0.897099*	78.6384	0.897099
Hydrogen Sulfide	5.06257	3.40561	0.00575872	0.0469591*	5.06257	0.0469591
Mass Flow	**lb/h**	**lb/h**	**lb/h**	**lb/h**	**lb/h**	**lb/h**
Water Gas	0	0	0	0*	0	0
Water	0.00871615	1.17988	8219.85	8221.17*	0.136290	8221.17
Methane	0.000907400	3.12512	3.36130E-18	3.14022*	0.0141886	3.14022
Ethane	0.000919118	2.08976	3.36130E-18	2.10505*	0.0143718	2.10505
Propane	0.000342046	1.09507	1.68065E-18	1.10076*	0.00534840	1.10076
i-Butane	2.29892E-05	0.103652	5.25203E-20	0.104035*	0.000359471	0.104035
n-Butane	0.000147593	0.513766	4.20162E-19	0.516221*	0.00230783	0.516221
i-Pentane	1.47304E-05	0.0714199	5.25203E-20	0.0716650*	0.000230332	0.0716650
n-Pentane	2.83019E-06	0.0350652	6.56504E-21	0.0351123*	4.42542E-05	0.0351123
Neohexane	0	0	0	0*	0	0
2,3-Dimethylbutane	0	0	0	0*	0	0
2-Methylpentane	0	0	0	0*	0	0
3-Methylpentane	0	0	0	0*	0	0
n-Hexane	3.96611E-07	0.00712083	1.64126E-21	0.00712743*	6.20161E-06	0.00712743
2,2-Dimethylpentane	0	0	0	0*	0	0
Methylcyclopentane	0	0	0	0*	0	0

2,4-Dimethylpentane	0	0	0	0*	0	0
Benzene	0.0492406	6.14443	3.39644	10.3601*	0.769951	10.3601
3,3-Dimethylpentane	0	0	0	0*	0	0
Cyclohexane	0	0	0	0*	0	0
2-Methylhexane	0	0	0	0*	0	0
2,3-Dimethylpentane	0	0	0	0*	0	0
1,1-Dimethylcyclopentane	0	0	0	0*	0	0
3-Methylhexane	0	0	0	0*	0	0
1,t-3-Dimethylcyclopentane	0	0	0	0*	0	0
1,c-3-Dimethylcyclopentane	0	0	0	0*	0	0
2,2,4-Trimethylpentane	0	0	0	0*	0	0
n-Heptane	1.68543E-07	0.00404586	4.10315E-22	0.00404866*	2.63542E-06	0.00404866
Methylcyclohexane	0	0	0	0*	0	0
1,1,3-Trimethylcyclopentane	0	0	0	0*	0	0
2,5-Dimethylhexane	0	0	0	0*	0	0
2,4-Dimethylhexane	0	0	0	0*	0	0
3,3-Dimethylhexane	0	0	0	0*	0	0
1,t-2,c-3-Trimethylcyclopentane	0	0	0	0*	0	0
2,3,4-Trimethylpentane	0	0	0	0*	0	0
Toluene	0.0208961	2.59834	0.997502	3.94348*	0.326742	3.94348
2,3-Dimethylhexane	0	0	0	0*	0	0
1,1,2-Trimethylcyclopentane	0	0	0	0*	0	0
2-Methylheptane	0	0	0	0*	0	0
4-Methylheptane	0	0	0	0*	0	0
3,4-Dimethylhexane	0	0	0	0*	0	0
3-Methylheptane	0	0	0	0*	0	0
3-Ethylhexane	0	0	0	0*	0	0
1,c-3-Dimethylcyclohexane	0	0	0	0*	0	0
1,t-4-Dimethylcyclohexane	0	0	0	0*	0	0
1,1-Dimethylcyclohexane	0	0	0	0*	0	0
2,2,4-Trimethylhexane	0	0	0	0*	0	0
Cycloheptane	0	0	0	0*	0	0
n-Octane	7.51065E-09	0.000425854	2.56447E-23	0.000425979*	1.17440E-07	0.000425979
1,t-3-Dimethylcyclohexane	0	0	0	0*	0	0
2,2-Dimethylheptane	0	0	0	0*	0	0
2,4-Dimethylheptane	0	0	0	0*	0	0
2,6-Dimethylheptane	0	0	0	0*	0	0
2,5-Dimethylheptane	0	0	0	0*	0	0
Ethylcyclohexane	0	0	0	0*	0	0
3,3-Dimethylheptane	0	0	0	0*	0	0
2,3,4-Trimethylhexane	0	0	0	0*	0	0
Ethylbenzene	0.000849283	0.108735	0.0369073	0.159771*	0.0132798	0.159771
2,3-Dimethylheptane	0	0	0	0*	0	0
m-Xylene	0.00112709	0.139590	0.0230785	0.181419*	0.0176237	0.181419
p-Xylene	0	0	0	0*	0	0
3,4-Dimethylheptane	0	0	0	0*	0	0
2-Methyloctane	0	0	0	0*	0	0
4-Methyloctane	0	0	0	0*	0	0
3-Methyloctane	0	0	0	0*	0	0
o-Xylene	0	0	0	0*	0	0
1,1,2-Trimethylcyclohexane	0	0	0	0*	0	0
n-Nonane	2.91448E-09	0.000155596	6.41117E-24	0.000155645*	4.55723E-08	0.000155645
Isopropylbenzene	0	0	0	0*	0	0
n-Butylcyclopentane	0	0	0	0*	0	0
n-Propylbenzene	0	0	0	0*	0	0
m-Ethyltoluene	0	0	0	0*	0	0
p-Ethyltoluene	0	0	0	0*	0	0
4-Methylnonane	0	0	0	0*	0	0
2-Methylnonane	0	0	0	0*	0	0
t-Butylbenzene	0	0	0	0*	0	0
Butylcyclohexane	0	0	0	0*	0	0
n-Decane	3.21594E-12	5.87248E-07	1.25218E-26	5.87301E-07*	5.02860E-11	5.87301E-07
Undecane	1.22146E-12	2.15046E-07	3.13045E-27	2.15067E-07*	1.90994E-11	2.15067E-07
Dodecane	0	0	0	0*	0	0
Tridecane	0	0	0	0*	0	0
Nitrogen	2.45315E-06	0.0174067	6.56504E-21	0.0174475*	3.83588E-05	0.0174475
Carbon Dioxide	0.401365	67.9745	8.60492E-16	74.6519*	6.27595	74.6519
Hydrogen Sulfide	0.0258390	3.00418	0.473642	3.90769*	0.404032	3.90769

Process Streams		**Breathing**	**Flash**	**Liquids**	**Produced Water w/ Hydrocarbon**	**Working**	**2**
Properties	**Status:**	Solved	Solved	Solved	Solved	Solved	Solved
Phase: **Total**	**From Block:**	**TANK-100**	**TANK-100**	**TANK-100**	--	**TANK-100**	**VLVE-100**
	To Block:	--	--	--	**VLVE-100**	--	**TANK-100**
Property	**Units**						
Temperature	°F	73.4428	73.4428	73.4428	97.2586*	73.4428	97.1263
Pressure	psia	13.26	13.26	13.26	19.6959*	13.26	14.6959*
Mole Fraction Vapor	%	98.2969	100	0	0.462179	98.2969	0.484842
Mole Fraction Light Liquid	%	0.489425	0	100	99.5378	0.489425	99.5152
Mole Fraction Heavy Liquid	%	1.21369	0	0	0	1.21369	0
Phase Mole Fraction	%	100	100	100	100	100	100
Molecular Weight	lb/lbmol	45.0245	41.8195	18.0234	18.1439	45.0245	18.1439
Mass Density	lb/ft^3	0.106877	0.0975083	62.2510	10.7939	0.106877	8.06802
Molar Flow	lbmol/h	0.0113359	2.10937	456.340	458.638	0.177254	458.638
Mass Flow	lb/h	0.510393	88.2127	8224.77	8321.48	7.98077	8321.48
Vapor Volumetric Flow	ft^3/h	4.77553	904.669	132.123	770.942	74.6725	1031.42
Liquid Volumetric Flow	gpm	0.595390	112.790	16.4725	96.1174	9.30982	128.592
Std Vapor Volumetric Flow	MMSCFD	0.000103243	0.0192113	4.15617	4.17710	0.00161436	4.17710
Std Liquid Volumetric Flow	sgpm	0.00124091	0.236001	16.4434	16.7*	0.0194036	16.7
Compressibility		0.976395	0.994026	0.000671043	0.00553944	0.976395	0.00553097
Specific Gravity			1.44392	0.998112			
API Gravity				9.99322			

Enthalpy	Btu/h	-1579.93	-276135	-5.60973E+07	-5.62084E+07	-24704.6	-5.62084E+07
Mass Enthalpy	Btu/lb	-3095.51	-3130.33	-6820.53	-6754.61	-3095.51	-6754.61
Mass Cp	Btu/(lb*°F)	0.221158	0.233326	0.978251	0.968951	0.221158	0.968706
Ideal Gas CpCv Ratio		1.25647	1.25735	1.32904	1.32767	1.25647	1.32768
Dynamic Viscosity	cP		0.0136471	0.953391			
Kinematic Viscosity	cSt		8.73733	0.956102			
Thermal Conductivity	Btu/(h*ft*°F)		0.0101568	0.348393			
Surface Tension	lbf/ft			0.00500592			
Net Ideal Gas Heating Value	Btu/ft^3	343.877	403.643	0.467530	2.46303	343.877	2.46303
Net Liquid Heating Value	Btu/lb	2784.44	3558.16	-1049.39	-996.637	2784.44	-996.637
Gross Ideal Gas Heating Value	Btu/ft^3	363.341	434.029	50.7909	52.6820	363.341	52.6820
Gross Liquid Heating Value	Btu/lb	2948.47	3833.94	10.1731	53.7056	2948.47	53.7056

Process Streams		**Breathing**	**Flash**	**Liquids**	**Produced Water w/ Hydrocarbon**	**Working**	**2**
Composition	**Status:**	Solved	Solved	Solved	Solved	Solved	Solved
Phase: **Vapor**	**From Block:**	**TANK-100**	**TANK-100**	**TANK-100**	--	**TANK-100**	**VLVE-100**
	To Block:	--	--	--	**VLVE-100**	--	**TANK-100**
Mole Fraction		%	%		%	%	%
Water Gas		0	0		0	0	0
Water		3.10683	3.10488		4.48858	3.10683	5.97499
Methane		0.507605	9.23513		9.17745	0.507605	8.76411
Ethane		0.274294	3.29476		3.27496	0.274294	3.12944
Propane		0.0695925	1.17731		1.17075	0.0695925	1.11791
i-Butane		0.00354751	0.0845441		0.0841346	0.00354751	0.0802855
n-Butane		0.0227654	0.419055		0.416729	0.0227654	0.397869
i-Pentane		0.00182632	0.0469286		0.0466943	0.00182632	0.0445567
n-Pentane		0.000350497	0.0230406		0.0229200	0.000350497	0.0218593
Neohexane		0	0		0	0	0
2,3-Dimethylbutane		0	0		0	0	0
2-Methylpentane		0	0		0	0	0
3-Methylpentane		0	0		0	0	0
n-Hexane		4.07844E-05	0.00391737		0.00389755	4.07844E-05	0.00371654
2,2-Dimethylpentane		0	0		0	0	0
Methylcyclopentane		0	0		0	0	0
2,4-Dimethylpentane		0	0		0	0	0
Benzene		5.44632	3.72917		3.85618	5.44632	4.12561
3,3-Dimethylpentane		0	0		0	0	0
Cyclohexane		0	0		0	0	0
2-Methylhexane		0	0		0	0	0
2,3-Dimethylpentane		0	0		0	0	0
1,1-Dimethylcyclopentane		0	0		0	0	0
3-Methylhexane		0	0		0	0	0
1,t-3-Dimethylcyclopentane		0	0		0	0	0
1,c-3-Dimethylcyclopentane		0	0		0	0	0
2,2,4-Trimethylpentane		0	0		0	0	0
n-Heptane		1.44553E-05	0.00191418		0.00190471	1.44553E-05	0.00181607
Methylcyclohexane		0	0		0	0	0
1,1,3-Trimethylcyclopentane		0	0		0	0	0
2,5-Dimethylhexane		0	0		0	0	0
2,4-Dimethylhexane		0	0		0	0	0
3,3-Dimethylhexane		0	0		0	0	0
1,t-2,c-3-Trimethylcyclopentane		0	0		0	0	0
2,3,4-Trimethylpentane		0	0		0	0	0
Toluene		1.80694	1.33691		1.36811	1.80694	1.43537
2,3-Dimethylhexane		0	0		0	0	0
1,1,2-Trimethylcyclopentane		0	0		0	0	0
2-Methylheptane		0	0		0	0	0
4-Methylheptane		0	0		0	0	0
3,4-Dimethylhexane		0	0		0	0	0
3-Methylheptane		0	0		0	0	0
3-Ethylhexane		0	0		0	0	0
1,c-3-Dimethylcyclohexane		0	0		0	0	0
1,t-4-Dimethylcyclohexane		0	0		0	0	0
1,1-Dimethylcyclohexane		0	0		0	0	0
2,2,4-Trimethylhexane		0	0		0	0	0
Cycloheptane		0	0		0	0	0
n-Octane		5.17914E-07	0.000176739		0.000175867	5.17914E-07	0.000167663
1,t-3-Dimethylcyclohexane		0	0		0	0	0
2,2-Dimethylheptane		0	0		0	0	0
2,4-Dimethylheptane		0	0		0	0	0
2,6-Dimethylheptane		0	0		0	0	0
2,5-Dimethylheptane		0	0		0	0	0
Ethylcyclohexane		0	0		0	0	0
3,3-Dimethylheptane		0	0		0	0	0
2,3,4-Trimethylhexane		0	0		0	0	0
Ethylbenzene		0.0484194	0.0485550		0.0508977	0.0484194	0.0527365
2,3-Dimethylheptane		0	0		0	0	0
m-Xylene		0.0677458	0.0623334		0.0630062	0.0677458	0.0640172
p-Xylene		0	0		0	0	0
3,4-Dimethylheptane		0	0		0	0	0
2-Methyloctane		0	0		0	0	0
4-Methyloctane		0	0		0	0	0
3-Methyloctane		0	0		0	0	0
o-Xylene		0	0		0	0	0
1,1,2-Trimethylcyclohexane		0	0		0	0	0
n-Nonane		1.54249E-07	5.75137E-05		5.72352E-05	1.54249E-07	5.45640E-05
Isopropylbenzene		0	0		0	0	0
n-Butylcyclopentane		0	0		0	0	0
n-Propylbenzene		0	0		0	0	0
m-Ethyltoluene		0	0		0	0	0
p-Ethyltoluene		0	0		0	0	0

4-Methylnonane	0	0		0	0	0
2-Methylnonane	0	0		0	0	0
t-Butylbenzene	0	0		0	0	0
Butylcyclohexane	0	0		0	0	0
n-Decane	1.08210E-10	1.95668E-07		1.94713E-07	1.08210E-10	1.85616E-07
Undecane	2.12125E-11	6.52225E-08		6.49055E-08	2.12125E-11	6.18728E-08
Dodecane	0	0		0	0	0
Tridecane	0	0		0	0	0
Nitrogen	0.000785890	0.0294576		0.0292936	0.000785890	0.0279488
Carbon Dioxide	81.8408	73.2229		71.9177	81.8408	70.6148
Hydrogen Sulfide	6.80208	4.17890		4.02656	6.80208	4.14274
Molar Flow	**lbmol/h**	**lbmol/h**	**lbmol/h**		**lbmol/h**	**lbmol/h**
Water Gas	0	0		0	0	0
Water	0.000346190	0.0654933		0.0951455	0.00541320	0.132864
Methane	5.65617E-05	0.194803		0.194537	0.000884427	0.194885
Ethane	3.05641E-05	0.0694987		0.0694201	0.000477916	0.0695884
Propane	7.75459E-06	0.0248339		0.0248166	0.000121255	0.0248585
i-Butane	3.95293E-07	0.00178335		0.00178342	6.18101E-06	0.00178528
n-Butane	2.53671E-06	0.00883941		0.00883350	3.96653E-05	0.00884727
i-Pentane	2.03504E-07	0.000989898		0.000989791	3.18209E-06	0.000990791
n-Pentane	3.90553E-08	0.000486012		0.000485841	6.10689E-07	0.000486077
Neohexane	0	0		0	0	0
2,3-Dimethylbutane	0	0		0	0	0
2-Methylpentane	0	0		0	0	0
3-Methylpentane	0	0		0	0	0
n-Hexane	4.54454E-09	8.26318E-05		8.26173E-05	7.10607E-08	8.26434E-05
2,2-Dimethylpentane	0	0		0	0	0
Methylcyclopentane	0	0		0	0	0
2,4-Dimethylpentane	0	0		0	0	0
Benzene	0.000606875	0.0786620		0.0817403	0.00948940	0.0917397
3,3-Dimethylpentane	0	0		0	0	0
Cyclohexane	0	0		0	0	0
2-Methylhexane	0	0		0	0	0
2,3-Dimethylpentane	0	0		0	0	0
1,1-Dimethylcyclopentane	0	0		0	0	0
3-Methylhexane	0	0		0	0	0
1,t-3-Dimethylcyclopentane	0	0		0	0	0
1,c-3-Dimethylcyclopentane	0	0		0	0	0
2,2,4-Trimethylpentane	0	0		0	0	0
n-Heptane	1.61073E-09	4.03771E-05		4.03747E-05	2.51862E-08	4.03833E-05
Methylcyclohexane	0	0		0	0	0
1,1,3-Trimethylcyclopentane	0	0		0	0	0
2,5-Dimethylhexane	0	0		0	0	0
2,4-Dimethylhexane	0	0		0	0	0
3,3-Dimethylhexane	0	0		0	0	0
1,t-2,c-3-Trimethylcyclopentane	0	0		0	0	0
2,3,4-Trimethylpentane	0	0		0	0	0
Toluene	0.000201345	0.0282004		0.0290002	0.00314833	0.0319179
2,3-Dimethylhexane	0	0		0	0	0
1,1,2-Trimethylcyclopentane	0	0		0	0	0
2-Methylheptane	0	0		0	0	0
4-Methylheptane	0	0		0	0	0
3,4-Dimethylhexane	0	0		0	0	0
3-Methylheptane	0	0		0	0	0
3-Ethylhexane	0	0		0	0	0
1,c-3-Dimethylcyclohexane	0	0		0	0	0
1,t-4-Dimethylcyclohexane	0	0		0	0	0
1,1-Dimethylcyclohexane	0	0		0	0	0
2,2,4-Trimethylhexane	0	0		0	0	0
Cycloheptane	0	0		0	0	0
n-Octane	5.77103E-11	3.72809E-06		3.72789E-06	9.02388E-10	3.72826E-06
1,t-3-Dimethylcyclohexane	0	0		0	0	0
2,2-Dimethylheptane	0	0		0	0	0
2,4-Dimethylheptane	0	0		0	0	0
2,6-Dimethylheptane	0	0		0	0	0
2,5-Dimethylheptane	0	0		0	0	0
Ethylcyclohexane	0	0		0	0	0
3,3-Dimethylheptane	0	0		0	0	0
2,3,4-Trimethylhexane	0	0		0	0	0
Ethylbenzene	5.39530E-06	0.00102420		0.00107889	8.43637E-05	0.00117268
2,3-Dimethylheptane	0	0		0	0	0
m-Xylene	7.54881E-06	0.00131484		0.00133556	0.000118037	0.00142353
p-Xylene	0	0		0	0	0
3,4-Dimethylheptane	0	0		0	0	0
2-Methyloctane	0	0		0	0	0
4-Methyloctane	0	0		0	0	0
3-Methyloctane	0	0		0	0	0
o-Xylene	0	0		0	0	0
1,1,2-Trimethylcyclohexane	0	0		0	0	0
n-Nonane	1.71878E-11	1.21318E-06		1.21323E-06	2.68757E-10	1.21332E-06
Isopropylbenzene	0	0		0	0	0
n-Butylcyclopentane	0	0		0	0	0
n-Propylbenzene	0	0		0	0	0
m-Ethyltoluene	0	0		0	0	0
p-Ethyltoluene	0	0		0	0	0
4-Methylnonane	0	0		0	0	0
2-Methylnonane	0	0		0	0	0
t-Butylbenzene	0	0		0	0	0
Butylcyclohexane	0	0		0	0	0
n-Decane	1.20577E-14	4.12736E-09		4.12739E-09	1.88540E-13	4.12749E-09
Undecane	2.36367E-15	1.37578E-09		1.37582E-09	3.69596E-14	1.37584E-09
Dodecane	0	0		0	0	0
Tridecane	0	0		0	0	0

Nitrogen	8.75705E-08	0.000621369		0.000620944	1.36930E-06	0.000621489
Carbon Dioxide	0.00911940	1.54454		1.52446	0.142595	1.57024
Hydrogen Sulfide	0.000757945	0.0881485		0.0853519	0.0118516	0.0921207
Mass Fraction	**%**	**%**	**%**		**%**	**%**
Water Gas	0	0		0	0	0
Water	1.23966	1.33754		1.94600	1.23966	2.59918
Methane	0.180360	3.54271		3.54311	0.180360	3.39498
Ethane	0.182675	2.36900		2.36983	0.182675	2.27219
Propane	0.0679676	1.24139		1.24237	0.0679676	1.19031
i-Butane	0.00456677	0.117502		0.117682	0.00456677	0.112678
n-Butane	0.0293063	0.582417		0.582891	0.0293063	0.558393
i-Pentane	0.00291843	0.0809633		0.0810747	0.00291843	0.0776247
n-Pentane	0.000560089	0.0397507		0.0397957	0.000560089	0.0380823
Neohexane	0	0		0	0	0
2,3-Dimethylbutane	0	0		0	0	0
2-Methylpentane	0	0		0	0	0
3-Methylpentane	0	0		0	0	0
n-Hexane	7.78432E-05	0.00807234		0.00808290	7.78432E-05	0.00773357
2,2-Dimethylpentane	0	0		0	0	0
Methylcyclopentane	0	0		0	0	0
2,4-Dimethylpentane	0	0		0	0	0
Benzene	9.42245	6.96547		7.24880	9.42245	7.78150
3,3-Dimethylpentane	0	0		0	0	0
Cyclohexane	0	0		0	0	0
2-Methylhexane	0	0		0	0	0
2,3-Dimethylpentane	0	0		0	0	0
1,1-Dimethylcyclopentane	0	0		0	0	0
3-Methylhexane	0	0		0	0	0
1,t-3-Dimethylcyclopentane	0	0		0	0	0
1,c-3-Dimethylcyclopentane	0	0		0	0	0
2,2,4-Trimethylpentane	0	0		0	0	0
n-Heptane	3.20809E-05	0.00458648		0.00459302	3.20809E-05	0.00439407
Methylcyclohexane	0	0		0	0	0
1,1,3-Trimethylcyclopentane	0	0		0	0	0
2,5-Dimethylhexane	0	0		0	0	0
2,4-Dimethylhexane	0	0		0	0	0
3,3-Dimethylhexane	0	0		0	0	0
1,t-2,c-3-Trimethylcyclopentane	0	0		0	0	0
2,3,4-Trimethylpentane	0	0		0	0	0
Toluene	3.68748	2.94554		3.03358	3.68748	3.19348
2,3-Dimethylhexane	0	0		0	0	0
1,1,2-Trimethylcyclopentane	0	0		0	0	0
2-Methylheptane	0	0		0	0	0
4-Methylheptane	0	0		0	0	0
3,4-Dimethylhexane	0	0		0	0	0
3-Methylheptane	0	0		0	0	0
3-Ethylhexane	0	0		0	0	0
1,c-3-Dimethylcyclohexane	0	0		0	0	0
1,t-4-Dimethylcyclohexane	0	0		0	0	0
1,1-Dimethylcyclohexane	0	0		0	0	0
2,2,4-Trimethylhexane	0	0		0	0	0
Cycloheptane	0	0		0	0	0
n-Octane	1.31032E-06	0.000482758		0.000483448	1.31032E-06	0.000462455
1,t-3-Dimethylcyclohexane	0	0		0	0	0
2,2-Dimethylheptane	0	0		0	0	0
2,4-Dimethylheptane	0	0		0	0	0
2,6-Dimethylheptane	0	0		0	0	0
2,5-Dimethylheptane	0	0		0	0	0
Ethylcyclohexane	0	0		0	0	0
3,3-Dimethylheptane	0	0		0	0	0
2,3,4-Trimethylhexane	0	0		0	0	0
Ethylbenzene	0.113853	0.123264		0.130038	0.113853	0.135192
2,3-Dimethylheptane	0	0		0	0	0
m-Xylene	0.159297	0.158243		0.160974	0.159297	0.164110
p-Xylene	0	0		0	0	0
3,4-Dimethylheptane	0	0		0	0	0
2-Methyloctane	0	0		0	0	0
4-Methyloctane	0	0		0	0	0
3-Methyloctane	0	0		0	0	0
o-Xylene	0	0		0	0	0
1,1,2-Trimethylcyclohexane	0	0		0	0	0
n-Nonane	4.38169E-07	0.000176387		0.000176657	4.38169E-07	0.000168982
Isopropylbenzene	0	0		0	0	0
n-Butylcyclopentane	0	0		0	0	0
n-Propylbenzene	0	0		0	0	0
m-Ethyltoluene	0	0		0	0	0
p-Ethyltoluene	0	0		0	0	0
4-Methylnonane	0	0		0	0	0
2-Methylnonane	0	0		0	0	0
t-Butylbenzene	0	0		0	0	0
Butylcyclohexane	0	0		0	0	0
n-Decane	3.41005E-10	6.65718E-07		6.66710E-07	3.41005E-10	6.37710E-07
Undecane	7.34374E-11	2.43781E-07		2.44149E-07	7.34374E-11	2.33529E-07
Dodecane	0	0		0	0	0
Tridecane	0	0		0	0	0
Nitrogen	0.000487609	0.0197326		0.0197484	0.000487609	0.0189055
Carbon Dioxide	79.7738	77.0575		76.1683	79.7738	75.0414
Hydrogen Sulfide	5.13448	3.40561		3.30245	5.13448	3.40924
Mass Flow	**lb/h**	**lb/h**	**lb/h**		**lb/h**	**lb/h**
Water Gas	0	0		0	0	0
Water	0.00623670	1.17988		1.71407	0.0975202	2.39358
Methane	0.000907389	3.12512		3.12084	0.0141884	3.12643
Ethane	0.000919034	2.08976		2.08740	0.0143705	2.09246

Propane	0.000341943	1.09507		1.09430	0.00534680	1.09615
i-Butane	2.29753E-05	0.103652		0.103656	0.000359254	0.103765
n-Butane	0.000147439	0.513766		0.513422	0.00230543	0.514223
i-Pentane	1.46826E-05	0.0714199		0.0714122	0.000229584	0.0714844
n-Pentane	2.81779E-06	0.0350652		0.0350528	4.40604E-05	0.0350699
Neohexane	0	0		0	0	0
2,3-Dimethylbutane	0	0		0	0	0
2-Methylpentane	0	0		0	0	0
3-Methylpentane	0	0		0	0	0
n-Hexane	3.91627E-07	0.00712083		0.00711958	6.12368E-06	0.00712182
2,2-Dimethylpentane	0	0		0	0	0
Methylcyclopentane	0	0		0	0	0
2,4-Dimethylpentane	0	0		0	0	0
Benzene	0.0474041	6.14443		6.38489	0.741234	7.16596
3,3-Dimethylpentane	0	0		0	0	0
Cyclohexane	0	0		0	0	0
2-Methylhexane	0	0		0	0	0
2,3-Dimethylpentane	0	0		0	0	0
1,1-Dimethylcyclopentane	0	0		0	0	0
3-Methylhexane	0	0		0	0	0
1,t-3-Dimethylcyclopentane	0	0		0	0	0
1,c-3-Dimethylcyclopentane	0	0		0	0	0
2,2,4-Trimethylpentane	0	0		0	0	0
n-Heptane	1.61398E-07	0.00404586		0.00404562	2.52371E-06	0.00404649
Methylcyclohexane	0	0		0	0	0
1,1,3-Trimethylcyclopentane	0	0		0	0	0
2,5-Dimethylhexane	0	0		0	0	0
2,4-Dimethylhexane	0	0		0	0	0
3,3-Dimethylhexane	0	0		0	0	0
1,t-2,c-3-Trimethylcyclopentane	0	0		0	0	0
2,3,4-Trimethylpentane	0	0		0	0	0
Toluene	0.0185516	2.59834		2.67204	0.290082	2.94087
2,3-Dimethylhexane	0	0		0	0	0
1,1,2-Trimethylcyclopentane	0	0		0	0	0
2-Methylheptane	0	0		0	0	0
4-Methylheptane	0	0		0	0	0
3,4-Dimethylhexane	0	0		0	0	0
3-Methylheptane	0	0		0	0	0
3-Ethylhexane	0	0		0	0	0
1,c-3-Dimethylcyclohexane	0	0		0	0	0
1,t-4-Dimethylcyclohexane	0	0		0	0	0
1,1-Dimethylcyclohexane	0	0		0	0	0
2,2,4-Trimethylhexane	0	0		0	0	0
Cycloheptane	0	0		0	0	0
n-Octane	6.59217E-09	0.000425854		0.000425831	1.03078E-07	0.000425873
1,t-3-Dimethylcyclohexane	0	0		0	0	0
2,2-Dimethylheptane	0	0		0	0	0
2,4-Dimethylheptane	0	0		0	0	0
2,6-Dimethylheptane	0	0		0	0	0
2,5-Dimethylheptane	0	0		0	0	0
Ethylcyclohexane	0	0		0	0	0
3,3-Dimethylheptane	0	0		0	0	0
2,3,4-Trimethylhexane	0	0		0	0	0
Ethylbenzene	0.000572792	0.108735		0.114540	0.00895647	0.124498
2,3-Dimethylheptane	0	0		0	0	0
m-Xylene	0.000801419	0.139590		0.141790	0.0125314	0.151129
p-Xylene	0	0		0	0	0
3,4-Dimethylheptane	0	0		0	0	0
2-Methyloctane	0	0		0	0	0
4-Methyloctane	0	0		0	0	0
3-Methyloctane	0	0		0	0	0
o-Xylene	0	0		0	0	0
1,1,2-Trimethylcyclohexane	0	0		0	0	0
n-Nonane	2.20442E-09	0.000155596		0.000155603	3.44694E-08	0.000155615
Isopropylbenzene	0	0		0	0	0
n-Butylcyclopentane	0	0		0	0	0
n-Propylbenzene	0	0		0	0	0
m-Ethyltoluene	0	0		0	0	0
p-Ethyltoluene	0	0		0	0	0
4-Methylnonane	0	0		0	0	0
2-Methylnonane	0	0		0	0	0
t-Butylbenzene	0	0		0	0	0
Butylcyclohexane	0	0		0	0	0
n-Decane	1.71559E-12	5.87248E-07		5.87251E-07	2.68258E-11	5.87266E-07
Undecane	3.69462E-13	2.15046E-07		2.15052E-07	5.77709E-12	2.15056E-07
Dodecane	0	0		0	0	0
Tridecane	0	0		0	0	0
Nitrogen	2.45315E-06	0.0174067		0.0173948	3.83587E-05	0.0174100
Carbon Dioxide	0.401340	67.9745		67.0906	6.27556	69.1054
Hydrogen Sulfide	0.0258314	3.00418		2.90887	0.403913	3.13956

Process Streams		Breathing	Flash	Liquids	Produced Water w/ Hydrocarbon	Working	2
Properties	Status:	Solved	Solved	Solved	Solved	Solved	Solved
Phase: Vapor	From Block:	TANK-100	TANK-100	TANK-100	--	TANK-100	VLVE-100
	To Block:	--	--	--	VLVE-100	--	TANK-100
Property	**Units**						
Temperature	°F	73.4428	73.4428		97.2586	73.4428	97.1263
Pressure	psia	13.26	13.26		19.6959	13.26	14.6959
Mole Fraction Vapor	%	100	100		100	100	100
Mole Fraction Light Liquid	%	0	0		0	0	0
Mole Fraction Heavy Liquid	%	0	0		0	0	0

Phase Mole Fraction	%	98.2969	100		0.462179	98.2969	0.484842
Molecular Weight	lb/lbmol	45.1498	41.8195		41.5535	45.1498	41.4134
Mass Density	lb/ft^3	0.105352	0.0975083		0.138029	0.105352	0.102473
Molar Flow	lbmol/h	0.0111428	2.10937		2.11972	0.174235	2.22367
Mass Flow	lb/h	0.503098	88.2127		88.0820	7.86669	92.0897
Vapor Volumetric Flow	ft^3/h	4.77540	904.669		638.142	74.6705	898.676
Liquid Volumetric Flow	gpm	0.595374	112.790		79.5606	9.30957	112.043
Std Vapor Volumetric Flow	MMSCFD	0.000101485	0.0192113		0.0193056	0.00158687	0.0202523
Std Liquid Volumetric Flow	sgpm	0.00122497	0.236001		0.235353	0.0191542	0.244720
Compressibility		0.993286	0.994026		0.992092	0.993286	0.993966
Specific Gravity		1.55891	1.44392		1.43474	1.55891	1.42990
API Gravity							
Enthalpy	Btu/h	-1563.48	-276135		-275176	-24447.4	-286472
Mass Enthalpy	Btu/lb	-3107.71	-3130.33		-3124.09	-3107.71	-3110.79
Mass Cp	Btu/(lb*°F)	0.215859	0.233326		0.240230	0.215859	0.240948
Ideal Gas CpCv Ratio		1.25793	1.25735		1.25062	1.25793	1.25019
Dynamic Viscosity	cP	0.0138851	0.0136471		0.0141843	0.0138851	0.0141287
Kinematic Viscosity	cSt	8.22780	8.73733		6.41533	8.22780	8.60740
Thermal Conductivity	Btu/(h*ft*°F)	0.00906961	0.0101568		0.0108261	0.00906961	0.0107641
Surface Tension	lbf/ft						
Net Ideal Gas Heating Value	Btu/ft^3	329.975	403.643		407.698	329.975	412.917
Net Liquid Heating Value	Btu/lb	2664.85	3558.16		3612.35	2664.85	3665.45
Gross Ideal Gas Heating Value	Btu/ft^3	348.247	434.029		438.857	348.247	444.623
Gross Liquid Heating Value	Btu/lb	2818.42	3833.94		3896.95	2818.42	3956.02

Process Streams		**Breathing**	**Flash**	**Liquids**	**Produced Water w/ Hydrocarbon**	**Working**	**2**
Composition	**Status:**	Solved	Solved	Solved	Solved	Solved	Solved
Phase: **Nonspecific Liquid**	**From Block:**	**TANK-100**	**TANK-100**	**TANK-100**	**--**	**TANK-100**	**VLVE-100**
	To Block:	**--**	**--**	**--**	**VLVE-100**	**--**	**TANK-100**
Mole Fraction		**%**				**%**	
Water Gas		0				0	
Water		0.255437				0.255437	
Methane		0.00127244				0.00127244	
Ethane		0.00501286				0.00501286	
Propane		0.00419547				0.00419547	
i-Butane		0.000431674				0.000431674	
n-Butane		0.00475980				0.00475980	
i-Pentane		0.00119523				0.00119523	
n-Pentane		0.000309611				0.000309611	
Neohexane		0				0	
2,3-Dimethylbutane		0				0	
2-Methylpentane		0				0	
3-Methylpentane		0				0	
n-Hexane		0.000104235				0.000104235	
2,2-Dimethylpentane		0				0	
Methylcyclopentane		0				0	
2,4-Dimethylpentane		0				0	
Benzene		42.3347				42.3347	
3,3-Dimethylpentane		0				0	
Cyclohexane		0				0	
2-Methylhexane		0				0	
2,3-Dimethylpentane		0				0	
1,1-Dimethylcyclopentane		0				0	
3-Methylhexane		0				0	
1,t-3-Dimethylcyclopentane		0				0	
1,c-3-Dimethylcyclopentane		0				0	
2,2,4-Trimethylpentane		0				0	
n-Heptane		0.000128516				0.000128516	
Methylcyclohexane		0				0	
1,1,3-Trimethylcyclopentane		0				0	
2,5-Dimethylhexane		0				0	
2,4-Dimethylhexane		0				0	
3,3-Dimethylhexane		0				0	
1,t-2,c-3-Trimethylcyclopentane		0				0	
2,3,4-Trimethylpentane		0				0	
Toluene		45.8525				45.8525	
2,3-Dimethylhexane		0				0	
1,1,2-Trimethylcyclopentane		0				0	
2-Methylheptane		0				0	
4-Methylheptane		0				0	
3,4-Dimethylhexane		0				0	
3-Methylheptane		0				0	
3-Ethylhexane		0				0	
1,c-3-Dimethylcyclohexane		0				0	
1,t-4-Dimethylcyclohexane		0				0	
1,1-Dimethylcyclohexane		0				0	
2,2,4-Trimethylhexane		0				0	
Cycloheptane		0				0	
n-Octane		1.44928E-05				1.44928E-05	
1,t-3-Dimethylcyclohexane		0				0	
2,2-Dimethylheptane		0				0	
2,4-Dimethylheptane		0				0	
2,6-Dimethylheptane		0				0	
2,5-Dimethylheptane		0				0	
Ethylcyclohexane		0				0	
3,3-Dimethylheptane		0				0	
2,3,4-Trimethylhexane		0				0	
Ethylbenzene		4.69388				4.69388	
2,3-Dimethylheptane		0				0	
m-Xylene		5.52886				5.52886	
p-Xylene		0				0	

3,4-Dimethylheptane	0	0
2-Methyloctane	0	0
4-Methyloctane	0	0
3-Methyloctane	0	0
o-Xylene	0	0
1,1,2-Trimethylcyclohexane	0	0
n-Nonane	9.97883E-06	9.97883E-06
Isopropylbenzene	0	0
n-Butylcyclopentane	0	0
n-Propylbenzene	0	0
m-Ethyltoluene	0	0
p-Ethyltoluene	0	0
4-Methylnonane	0	0
2-Methylnonane	0	0
t-Butylbenzene	0	0
Butylcyclohexane	0	0
n-Decane	1.90064E-08	1.90064E-08
Undecane	9.82461E-09	9.82461E-09
Dodecane	0	0
Tridecane	0	0
Nitrogen	3.86315E-07	3.86315E-07
Carbon Dioxide	0.938501	0.938501
Hydrogen Sulfide	0.378655	0.378655
Molar Flow	**lbmol/h**	**lbmol/h**
Water Gas	0	0
Water	1.41719E-07	2.21598E-06
Methane	7.05960E-10	1.10387E-08
Ethane	2.78117E-09	4.34878E-08
Propane	2.32768E-09	3.63967E-08
i-Butane	2.39496E-10	3.74488E-09
n-Butane	2.64077E-09	4.12924E-08
i-Pentane	6.63125E-10	1.03690E-08
n-Pentane	1.71774E-10	2.68595E-09
Neohexane	0	0
2,3-Dimethylbutane	0	0
2-Methylpentane	0	0
3-Methylpentane	0	0
n-Hexane	5.78302E-11	9.04262E-10
2,2-Dimethylpentane	0	0
Methylcyclopentane	0	0
2,4-Dimethylpentane	0	0
Benzene	2.34876E-05	0.000367264
3,3-Dimethylpentane	0	0
Cyclohexane	0	0
2-Methylhexane	0	0
2,3-Dimethylpentane	0	0
1,1-Dimethylcyclopentane	0	0
3-Methylhexane	0	0
1,t-3-Dimethylcyclopentane	0	0
1,c-3-Dimethylcyclopentane	0	0
2,2,4-Trimethylpentane	0	0
n-Heptane	7.13015E-11	1.11491E-09
Methylcyclohexane	0	0
1,1,3-Trimethylcyclopentane	0	0
2,5-Dimethylhexane	0	0
2,4-Dimethylhexane	0	0
3,3-Dimethylhexane	0	0
1,t-2,c-3-Trimethylcyclopentane	0	0
2,3,4-Trimethylpentane	0	0
Toluene	2.54393E-05	0.000397782
2,3-Dimethylhexane	0	0
1,1,2-Trimethylcyclopentane	0	0
2-Methylheptane	0	0
4-Methylheptane	0	0
3,4-Dimethylhexane	0	0
3-Methylheptane	0	0
3-Ethylhexane	0	0
1,c-3-Dimethylcyclohexane	0	0
1,t-4-Dimethylcyclohexane	0	0
1,1-Dimethylcyclohexane	0	0
2,2,4-Trimethylhexane	0	0
Cycloheptane	0	0
n-Octane	8.04073E-12	1.25729E-10
1,t-3-Dimethylcyclohexane	0	0
2,2-Dimethylheptane	0	0
2,4-Dimethylheptane	0	0
2,6-Dimethylheptane	0	0
2,5-Dimethylheptane	0	0
Ethylcyclohexane	0	0
3,3-Dimethylheptane	0	0
2,3,4-Trimethylhexane	0	0
Ethylbenzene	2.60420E-06	4.07206E-05
2,3-Dimethylheptane	0	0
m-Xylene	3.06745E-06	4.79642E-05
p-Xylene	0	0
3,4-Dimethylheptane	0	0
2-Methyloctane	0	0
4-Methyloctane	0	0
3-Methyloctane	0	0
o-Xylene	0	0
1,1,2-Trimethylcyclohexane	0	0
n-Nonane	5.53633E-12	8.65688E-11
Isopropylbenzene	0	0

n-Butylcyclopentane	0	0
n-Propylbenzene	0	0
m-Ethyltoluene	0	0
p-Ethyltoluene	0	0
4-Methylnonane	0	0
2-Methylnonane	0	0
t-Butylbenzene	0	0
Butylcyclohexane	0	0
n-Decane	1.05449E-14	1.64886E-13
Undecane	5.45077E-15	8.52309E-14
Dodecane	0	0
Tridecane	0	0
Nitrogen	2.14331E-13	3.35138E-12
Carbon Dioxide	5.20687E-07	8.14173E-06
Hydrogen Sulfide	2.10081E-07	3.28493E-06
Mass Fraction	**%**	**%**
Water Gas	0	0
Water	0.0530371	0.0530371
Methane	0.000235268	0.000235268
Ethane	0.00173724	0.00173724
Propane	0.00213221	0.00213221
i-Butane	0.000289169	0.000289169
n-Butane	0.00318849	0.00318849
i-Pentane	0.000993886	0.000993886
n-Pentane	0.000257454	0.000257454
Neohexane	0	0
2,3-Dimethylbutane	0	0
2-Methylpentane	0	0
3-Methylpentane	0	0
n-Hexane	0.000103526	0.000103526
2,2-Dimethylpentane	0	0
Methylcyclopentane	0	0
2,4-Dimethylpentane	0	0
Benzene	38.1126	38.1126
3,3-Dimethylpentane	0	0
Cyclohexane	0	0
2-Methylhexane	0	0
2,3-Dimethylpentane	0	0
1,1-Dimethylcyclopentane	0	0
3-Methylhexane	0	0
1,t-3-Dimethylcyclopentane	0	0
1,c-3-Dimethylcyclopentane	0	0
2,2,4-Trimethylpentane	0	0
n-Heptane	0.000148418	0.000148418
Methylcyclohexane	0	0
1,1,3-Trimethylcyclopentane	0	0
2,5-Dimethylhexane	0	0
2,4-Dimethylhexane	0	0
3,3-Dimethylhexane	0	0
1,t-2,c-3-Trimethylcyclopentane	0	0
2,3,4-Trimethylpentane	0	0
Toluene	48.6921	48.6921
2,3-Dimethylhexane	0	0
1,1,2-Trimethylcyclopentane	0	0
2-Methylheptane	0	0
4-Methylheptane	0	0
3,4-Dimethylhexane	0	0
3-Methylheptane	0	0
3-Ethylhexane	0	0
1,c-3-Dimethylcyclohexane	0	0
1,t-4-Dimethylcyclohexane	0	0
1,1-Dimethylcyclohexane	0	0
2,2,4-Trimethylhexane	0	0
Cycloheptane	0	0
n-Octane	1.90802E-05	1.90802E-05
1,t-3-Dimethylcyclohexane	0	0
2,2-Dimethylheptane	0	0
2,4-Dimethylheptane	0	0
2,6-Dimethylheptane	0	0
2,5-Dimethylheptane	0	0
Ethylcyclohexane	0	0
3,3-Dimethylheptane	0	0
2,3,4-Trimethylhexane	0	0
Ethylbenzene	5.74338	5.74338
2,3-Dimethylheptane	0	0
m-Xylene	6.76505	6.76505
p-Xylene	0	0
3,4-Dimethylheptane	0	0
2-Methyloctane	0	0
4-Methyloctane	0	0
3-Methyloctane	0	0
o-Xylene	0	0
1,1,2-Trimethylcyclohexane	0	0
n-Nonane	1.47506E-05	1.47506E-05
Isopropylbenzene	0	0
n-Butylcyclopentane	0	0
n-Propylbenzene	0	0
m-Ethyltoluene	0	0
p-Ethyltoluene	0	0
4-Methylnonane	0	0
2-Methylnonane	0	0
t-Butylbenzene	0	0
Butylcyclohexane	0	0

n-Decane	3.11677E-08	3.11677E-08
Undecane	1.76991E-08	1.76991E-08
Dodecane	0	0
Tridecane	0	0
Nitrogen	1.24728E-07	1.24728E-07
Carbon Dioxide	0.476031	0.476031
Hydrogen Sulfide	0.148734	0.148734
Mass Flow	**lb/h**	**lb/h**
Water Gas	0	0
Water	2.55310E-06	3.99215E-05
Methane	1.13253E-08	1.77089E-07
Ethane	8.36272E-08	1.30764E-06
Propane	1.02640E-07	1.60494E-06
i-Butane	1.39200E-08	2.17660E-07
n-Butane	1.53487E-07	2.40001E-06
i-Pentane	4.78437E-08	7.48108E-07
n-Pentane	1.23933E-08	1.93788E-07
Neohexane	0	0
2,3-Dimethylbutane	0	0
2-Methylpentane	0	0
3-Methylpentane	0	0
n-Hexane	4.98354E-09	7.79251E-08
2,2-Dimethylpentane	0	0
Methylcyclopentane	0	0
2,4-Dimethylpentane	0	0
Benzene	0.00183466	0.0286877
3,3-Dimethylpentane	0	0
Cyclohexane	0	0
2-Methylhexane	0	0
2,3-Dimethylpentane	0	0
1,1-Dimethylcyclopentane	0	0
3-Methylhexane	0	0
1,t-3-Dimethylcyclopentane	0	0
1,c-3-Dimethylcyclopentane	0	0
2,2,4-Trimethylpentane	0	0
n-Heptane	7.14455E-09	1.11716E-07
Methylcyclohexane	0	0
1,1,3-Trimethylcyclopentane	0	0
2,5-Dimethylhexane	0	0
2,4-Dimethylhexane	0	0
3,3-Dimethylhexane	0	0
1,t-2,c-3-Trimethylcyclopentane	0	0
2,3,4-Trimethylpentane	0	0
Toluene	0.00234394	0.0366510
2,3-Dimethylhexane	0	0
1,1,2-Trimethylcyclopentane	0	0
2-Methylheptane	0	0
4-Methylheptane	0	0
3,4-Dimethylhexane	0	0
3-Methylheptane	0	0
3-Ethylhexane	0	0
1,c-3-Dimethylcyclohexane	0	0
1,t-4-Dimethylcyclohexane	0	0
1,1-Dimethylcyclohexane	0	0
2,2,4-Trimethylhexane	0	0
Cycloheptane	0	0
n-Octane	9.18481E-10	1.43618E-08
1,t-3-Dimethylcyclohexane	0	0
2,2-Dimethylheptane	0	0
2,4-Dimethylheptane	0	0
2,6-Dimethylheptane	0	0
2,5-Dimethylheptane	0	0
Ethylcyclohexane	0	0
3,3-Dimethylheptane	0	0
2,3,4-Trimethylhexane	0	0
Ethylbenzene	0.000276475	0.00432310
2,3-Dimethylheptane	0	0
m-Xylene	0.000325656	0.00509212
p-Xylene	0	0
3,4-Dimethylheptane	0	0
2-Methyloctane	0	0
4-Methyloctane	0	0
3-Methyloctane	0	0
o-Xylene	0	0
1,1,2-Trimethylcyclohexane	0	0
n-Nonane	7.10062E-10	1.11029E-08
Isopropylbenzene	0	0
n-Butylcyclopentane	0	0
n-Propylbenzene	0	0
m-Ethyltoluene	0	0
p-Ethyltoluene	0	0
4-Methylnonane	0	0
2-Methylnonane	0	0
t-Butylbenzene	0	0
Butylcyclohexane	0	0
n-Decane	1.50035E-12	2.34602E-11
Undecane	8.52000E-13	1.33223E-11
Dodecane	0	0
Tridecane	0	0
Nitrogen	6.00413E-12	9.38836E-11
Carbon Dioxide	2.29152E-05	0.000358313
Hydrogen Sulfide	7.15974E-06	0.000111953

Process Streams		Breathing	Flash	Liquids	Produced Water w/ Hydrocarbon	Working	2
Properties	**Status:**	Solved	Solved	Solved	Solved	Solved	Solved
Phase: **Nonspecific Liquid**	**From Block:**	TANK-100	TANK-100	TANK-100	--	TANK-100	VLVE-100
	To Block:	--	--	--	VLVE-100	--	TANK-100
Property	**Units**						
Temperature	°F	73.4428				73.4428	
Pressure	psia	13.26				13.26	
Mole Fraction Vapor	%	0				0	
Mole Fraction Light Liquid	%	100				100	
Mole Fraction Heavy Liquid	%	0				0	
Phase Mole Fraction	%	0.489425				0.489425	
Molecular Weight	lb/lbmol	86.7652				86.7652	
Mass Density	lb/ft^3	54.3690				54.3690	
Molar Flow	lbmol/h	5.54807E-05				0.000867525	
Mass Flow	lb/h	0.00481380				0.0752709	
Vapor Volumetric Flow	ft^3/h	8.85393E-05				0.00138444	
Liquid Volumetric Flow	gpm	1.10387E-05				0.000172606	
Std Vapor Volumetric Flow	MMSCFD	5.05297E-07				7.90108E-06	
Std Liquid Volumetric Flow	sgpm	1.09853E-05				0.000171771	
Compressibility		0.00369875				0.00369875	
Specific Gravity		0.871736				0.871736	
API Gravity		29.5120				29.5120	
Enthalpy	Btu/h	0.466087				7.28797	
Mass Enthalpy	Btu/lb	96.8231				96.8231	
Mass Cp	Btu/(lb*°F)	0.384719				0.384719	
Ideal Gas CpCv Ratio		1.09550				1.09550	
Dynamic Viscosity	cP	0.590547				0.590547	
Kinematic Viscosity	cSt	0.678082				0.678082	
Thermal Conductivity	Btu/(h*ft*°F)	0.0788674				0.0788674	
Surface Tension	lbf/ft	0.00195349?				0.00195349?	
Net Ideal Gas Heating Value	Btu/ft^3	3986.68				3986.68	
Net Liquid Heating Value	Btu/lb	17254.4				17254.4	
Gross Ideal Gas Heating Value	Btu/ft^3	4169.06				4169.06	
Gross Liquid Heating Value	Btu/lb	18051.5				18051.5	

Process Streams		Breathing	Flash	Liquids	Produced Water w/ Hydrocarbon	Working	2
Composition	**Status:**	Solved	Solved	Solved	Solved	Solved	Solved
Phase: **Aqueous Liquid**	**From Block:**	TANK-100	TANK-100	TANK-100	--	TANK-100	VLVE-100
	To Block:	--	--	--	VLVE-100	--	TANK-100
Mole Fraction		%	%	%	%	%	%
Water Gas		0	0	0	0	0	0
Water		99.9314	99.9849	99.9412	99.9314	99.9557	
Methane		1.13662E-05	4.59143E-20	0.000264509	1.13662E-05	0.000188309	
Ethane		9.31312E-06	2.44962E-20	0.000128605	9.31312E-06	9.17735E-05	
Propane		1.68000E-06	8.35206E-21	3.20536E-05	1.68000E-06	2.28773E-05	
i-Butane		6.08721E-08	1.98014E-22	1.42492E-06	6.08721E-08	1.01774E-06	
n-Butane		5.05987E-07	1.58412E-21	1.05494E-05	5.05987E-07	7.53493E-06	
i-Pentane		2.91765E-08	1.59518E-22	7.67430E-07	2.91765E-08	5.48529E-07	
n-Pentane		2.19216E-09	1.99398E-23	1.80429E-07	2.19216E-09	1.28746E-07	
Neohexane		0	0	0	0	0	
2,3-Dimethylbutane		0	0	0	0	0	
2-Methylpentane		0	0	0	0	0	
3-Methylpentane		0	0	0	0	0	
n-Hexane		1.76239E-10	4.17355E-24	1.99442E-08	1.76239E-10	1.42464E-08	
2,2-Dimethylpentane		0	0	0	0	0	
Methylcyclopentane		0	0	0	0	0	
2,4-Dimethylpentane		0	0	0	0	0	
Benzene		0.0173613	0.00952839	0.0111476	0.0173613	0.00895930	
3,3-Dimethylpentane		0	0	0	0	0	
Cyclohexane		0	0	0	0	0	
2-Methylhexane		0	0	0	0	0	
2,3-Dimethylpentane		0	0	0	0	0	
1,1-Dimethylcyclopentane		0	0	0	0	0	
3-Methylhexane		0	0	0	0	0	
1,t-3-Dimethylcyclopentane		0	0	0	0	0	
1,c-3-Dimethylcyclopentane		0	0	0	0	0	
2,2,4-Trimethylpentane		0	0	0	0	0	
n-Heptane		4.67741E-11	8.97331E-25	6.65111E-09	4.67741E-11	4.75693E-09	
Methylcyclohexane		0	0	0	0	0	
1,1,3-Trimethylcyclopentane		0	0	0	0	0	
2,5-Dimethylhexane		0	0	0	0	0	
2,4-Dimethylhexane		0	0	0	0	0	
3,3-Dimethylhexane		0	0	0	0	0	
1,t-2,c-3-Trimethylcyclopentane		0	0	0	0	0	
2,3,4-Trimethylpentane		0	0	0	0	0	
Toluene		0.00435142	0.00237238	0.00302273	0.00435142	0.00238416	
2,3-Dimethylhexane		0	0	0	0	0	
1,1,2-Trimethylcyclopentane		0	0	0	0	0	
2-Methylheptane		0	0	0	0	0	
4-Methylheptane		0	0	0	0	0	
3,4-Dimethylhexane		0	0	0	0	0	
3-Methylheptane		0	0	0	0	0	
3-Ethylhexane		0	0	0	0	0	
1,c-3-Dimethylcyclohexane		0	0	0	0	0	
1,t-4-Dimethylcyclohexane		0	0	0	0	0	
1,1-Dimethylcyclohexane		0	0	0	0	0	
2,2,4-Trimethylhexane		0	0	0	0	0	
Cycloheptane		0	0	0	0	0	
n-Octane		7.10555E-13	4.91965E-26	2.83443E-10	7.10555E-13	2.02725E-10	

1,t-3-Dimethylcyclohexane	0	0	0	0	0
2,2-Dimethylheptane	0	0	0	0	0
2,4-Dimethylheptane	0	0	0	0	0
2,6-Dimethylheptane	0	0	0	0	0
2,5-Dimethylheptane	0	0	0	0	0
Ethylcyclohexane	0	0	0	0	0
3,3-Dimethylheptane	0	0	0	0	0
2,3,4-Trimethylhexane	0	0	0	0	0
Ethylbenzene	0.000105856	7.61804E-05	9.33241E-05	0.000105856	7.27953E-05
2,3-Dimethylheptane	0	0	0	0	0
m-Xylene	9.45665E-05	4.76363E-05	8.17680E-05	9.45665E-05	6.25126E-05
p-Xylene	0	0	0	0	0
3,4-Dimethylheptane	0	0	0	0	0
2-Methyloctane	0	0	0	0	0
4-Methyloctane	0	0	0	0	0
3-Methyloctane	0	0	0	0	0
o-Xylene	0	0	0	0	0
1,1,2-Trimethylcyclohexane	0	0	0	0	0
n-Nonane	2.24987E-13	1.09540E-26	7.15464E-11	2.24987E-13	5.13103E-11
Isopropylbenzene	0	0	0	0	0
n-Butylcyclopentane	0	0	0	0	0
n-Propylbenzene	0	0	0	0	0
m-Ethyltoluene	0	0	0	0	0
p-Ethyltoluene	0	0	0	0	0
4-Methylnonane	0	0	0	0	0
2-Methylnonane	0	0	0	0	0
t-Butylbenzene	0	0	0	0	0
Butylcyclohexane	0	0	0	0	0
n-Decane	4.62201E-17	1.92855E-29	7.71273E-14	4.62201E-17	5.53158E-14
Undecane	9.40794E-18	4.38871E-30	2.06161E-14	9.40794E-18	1.48193E-14
Dodecane	0	0	0	0	0
Tridecane	0	0	0	0	0
Nitrogen	8.53827E-09	5.13551E-23	4.12143E-07	8.53827E-09	2.92920E-07
Carbon Dioxide	0.0372348	4.28462E-18	0.0376349	0.0372348	0.0276131
Hydrogen Sulfide	0.00947582	0.00304545	0.00641979	0.00947582	0.00493820
Molar Flow	**lbmol/h**	**lbmol/h**	**lbmol/h**	**lbmol/h**	**lbmol/h**
Water Gas	0	0	0	0	0
Water	0.000137488	456.271	456.249	0.00214984	456.211
Methane	1.56380E-11	2.09525E-19	0.00120753	2.44523E-10	0.000859470
Ethane	1.28132E-11	1.11786E-19	0.000587106	2.00354E-10	0.000418867
Propane	2.31139E-12	3.81137E-20	0.000146330	3.61421E-11	0.000104415
i-Butane	8.37495E-14	9.03618E-22	6.50501E-06	1.30955E-12	4.64509E-06
n-Butane	6.96151E-13	7.22895E-21	4.81601E-05	1.08854E-11	3.43905E-05
i-Pentane	4.01418E-14	7.27944E-22	3.50346E-06	6.27678E-13	2.50356E-06
n-Pentane	3.01603E-15	9.09930E-23	8.23689E-07	4.71602E-14	5.87615E-07
Neohexane	0	0	0	0	0
2,3-Dimethylbutane	0	0	0	0	0
2-Methylpentane	0	0	0	0	0
3-Methylpentane	0	0	0	0	0
n-Hexane	2.42475E-16	1.90456E-23	9.10486E-08	3.79146E-15	6.50226E-08
2,2-Dimethylpentane	0	0	0	0	0
Methylcyclopentane	0	0	0	0	0
2,4-Dimethylpentane	0	0	0	0	0
Benzene	2.38862E-08	0.0434818	0.0508909	3.73496E-07	0.0408915
3,3-Dimethylpentane	0	0	0	0	0
Cyclohexane	0	0	0	0	0
2-Methylhexane	0	0	0	0	0
2,3-Dimethylpentane	0	0	0	0	0
1,1-Dimethylcyclopentane	0	0	0	0	0
3-Methylhexane	0	0	0	0	0
1,t-3-Dimethylcyclopentane	0	0	0	0	0
1,c-3-Dimethylcyclopentane	0	0	0	0	0
2,2,4-Trimethylpentane	0	0	0	0	0
n-Heptane	6.43531E-17	4.09488E-24	3.03635E-08	1.00626E-15	2.17113E-08
Methylcyclohexane	0	0	0	0	0
1,1,3-Trimethylcyclopentane	0	0	0	0	0
2,5-Dimethylhexane	0	0	0	0	0
2,4-Dimethylhexane	0	0	0	0	0
3,3-Dimethylhexane	0	0	0	0	0
1,t-2,c-3-Trimethylcyclopentane	0	0	0	0	0
2,3,4-Trimethylpentane	0	0	0	0	0
Toluene	5.98681E-09	0.0108261	0.0137993	9.36128E-08	0.0108816
2,3-Dimethylhexane	0	0	0	0	0
1,1,2-Trimethylcyclopentane	0	0	0	0	0
2-Methylheptane	0	0	0	0	0
4-Methylheptane	0	0	0	0	0
3,4-Dimethylhexane	0	0	0	0	0
3-Methylheptane	0	0	0	0	0
3-Ethylhexane	0	0	0	0	0
1,c-3-Dimethylcyclohexane	0	0	0	0	0
1,t-4-Dimethylcyclohexane	0	0	0	0	0
1,1-Dimethylcyclohexane	0	0	0	0	0
2,2,4-Trimethylhexane	0	0	0	0	0
Cycloheptane	0	0	0	0	0
n-Octane	9.77601E-19	2.24503E-25	1.29397E-09	1.52863E-17	9.25267E-10
1,t-3-Dimethylcyclohexane	0	0	0	0	0
2,2-Dimethylheptane	0	0	0	0	0
2,4-Dimethylheptane	0	0	0	0	0
2,6-Dimethylheptane	0	0	0	0	0
2,5-Dimethylheptane	0	0	0	0	0
Ethylcyclohexane	0	0	0	0	0
3,3-Dimethylheptane	0	0	0	0	0
2,3,4-Trimethylhexane	0	0	0	0	0

Ethylbenzene	1.45640E-10	0.000347641	0.000426041	2.27729E-09	0.000332248
2,3-Dimethylheptane	0	0	0	0	0
m-Xylene	1.30107E-10	0.000217383	0.000373285	2.03442E-09	0.000285316
p-Xylene	0	0	0	0	0
3,4-Dimethylheptane	0	0	0	0	0
2-Methyloctane	0	0	0	0	0
4-Methyloctane	0	0	0	0	0
3-Methyloctane	0	0	0	0	0
o-Xylene	0	0	0	0	0
1,1,2-Trimethylcyclohexane	0	0	0	0	0
n-Nonane	3.09543E-19	4.99876E-26	3.26622E-10	4.84017E-18	2.34187E-10
Isopropylbenzene	0	0	0	0	0
n-Butylcyclopentane	0	0	0	0	0
n-Propylbenzene	0	0	0	0	0
m-Ethyltoluene	0	0	0	0	0
p-Ethyltoluene	0	0	0	0	0
4-Methylnonane	0	0	0	0	0
2-Methylnonane	0	0	0	0	0
t-Butylbenzene	0	0	0	0	0
Butylcyclohexane	0	0	0	0	0
n-Decane	6.35908E-23	8.80072E-29	3.52100E-13	9.94338E-22	2.52469E-13
Undecane	1.29437E-23	2.00274E-29	9.41162E-14	2.02394E-22	6.76373E-14
Dodecane	0	0	0	0	0
Tridecane	0	0	0	0	0
Nitrogen	1.17472E-14	2.34353E-22	1.88151E-06	1.83685E-13	1.33693E-06
Carbon Dioxide	5.12286E-08	1.95524E-17	0.171810	8.01037E-07	0.126030
Hydrogen Sulfide	1.30371E-08	0.0138976	0.0293075	2.03855E-07	0.0225387
Mass Fraction	**%**	**%**	**%**	**%**	**%**
Water Gas	0	0	0	0	0
Water	99.7927	99.9401	99.8307	99.7927	99.8711
Methane	1.01075E-05	4.08680E-20	0.000235283	1.01075E-05	0.000167546
Ethane	1.55228E-05	4.08680E-20	0.000214416	1.55228E-05	0.000153048
Propane	4.10640E-06	2.04340E-20	7.83702E-05	4.10640E-06	5.59488E-05
i-Butane	1.96117E-07	6.38562E-22	4.59210E-06	1.96117E-07	3.28071E-06
n-Butane	1.63019E-06	5.10850E-21	3.39977E-05	1.63019E-06	2.42892E-05
i-Pentane	1.16686E-07	6.38562E-22	3.07006E-06	1.16686E-07	2.19492E-06
n-Pentane	8.76711E-09	7.98203E-23	7.21794E-07	8.76711E-09	5.15174E-07
Neohexane	0	0	0	0	0
2,3-Dimethylbutane	0	0	0	0	0
2-Methylpentane	0	0	0	0	0
3-Methylpentane	0	0	0	0	0
n-Hexane	8.41864E-10	1.99551E-23	9.52966E-08	8.41864E-10	6.80895E-08
2,2-Dimethylpentane	0	0	0	0	0
Methylcyclopentane	0	0	0	0	0
2,4-Dimethylpentane	0	0	0	0	0
Benzene	0.0751718	0.0412953	0.0482812	0.0751718	0.0388135
3,3-Dimethylpentane	0	0	0	0	0
Cyclohexane	0	0	0	0	0
2-Methylhexane	0	0	0	0	0
2,3-Dimethylpentane	0	0	0	0	0
1,1-Dimethylcyclopentane	0	0	0	0	0
3-Methylhexane	0	0	0	0	0
1,t-3-Dimethylcyclopentane	0	0	0	0	0
1,c-3-Dimethylcyclopentane	0	0	0	0	0
2,2,4-Trimethylpentane	0	0	0	0	0
n-Heptane	2.59799E-10	4.98877E-24	3.69529E-08	2.59799E-10	2.64359E-08
Methylcyclohexane	0	0	0	0	0
1,1,3-Trimethylcyclopentane	0	0	0	0	0
2,5-Dimethylhexane	0	0	0	0	0
2,4-Dimethylhexane	0	0	0	0	0
3,3-Dimethylhexane	0	0	0	0	0
1,t-2,c-3-Trimethylcyclopentane	0	0	0	0	0
2,3,4-Trimethylpentane	0	0	0	0	0
Toluene	0.0222243	0.0121280	0.0154425	0.0222243	0.0121834
2,3-Dimethylhexane	0	0	0	0	0
1,1,2-Trimethylcyclopentane	0	0	0	0	0
2-Methylheptane	0	0	0	0	0
4-Methylheptane	0	0	0	0	0
3,4-Dimethylhexane	0	0	0	0	0
3-Methylheptane	0	0	0	0	0
3-Ethylhexane	0	0	0	0	0
1,c-3-Dimethylcyclohexane	0	0	0	0	0
1,t-4-Dimethylcyclohexane	0	0	0	0	0
1,1-Dimethylcyclohexane	0	0	0	0	0
2,2,4-Trimethylhexane	0	0	0	0	0
Cycloheptane	0	0	0	0	0
n-Octane	4.49913E-12	3.11798E-25	1.79523E-09	4.49913E-12	1.28432E-09
1,t-3-Dimethylcyclohexane	0	0	0	0	0
2,2-Dimethylheptane	0	0	0	0	0
2,4-Dimethylheptane	0	0	0	0	0
2,6-Dimethylheptane	0	0	0	0	0
2,5-Dimethylheptane	0	0	0	0	0
Ethylcyclohexane	0	0	0	0	0
3,3-Dimethylheptane	0	0	0	0	0
2,3,4-Trimethylhexane	0	0	0	0	0
Ethylbenzene	0.000622950	0.000448734	0.000549356	0.000622950	0.000428624
2,3-Dimethylheptane	0	0	0	0	0
m-Xylene	0.000556512	0.000280597	0.000481330	0.000556512	0.000368078
p-Xylene	0	0	0	0	0
3,4-Dimethylheptane	0	0	0	0	0
2-Methyloctane	0	0	0	0	0
4-Methyloctane	0	0	0	0	0
3-Methyloctane	0	0	0	0	0

o-Xylene	0	0	0	0	0
1,1,2-Trimethylcyclohexane	0	0	0	0	0
n-Nonane	1.59951E-12	7.79495E-26	5.08793E-10	1.59951E-12	3.64981E-10
Isopropylbenzene	0	0	0	0	0
n-Butylcyclopentane	0	0	0	0	0
n-Propylbenzene	0	0	0	0	0
m-Ethyltoluene	0	0	0	0	0
p-Ethyltoluene	0	0	0	0	0
4-Methylnonane	0	0	0	0	0
2-Methylnonane	0	0	0	0	0
t-Butylbenzene	0	0	0	0	0
Butylcyclohexane	0	0	0	0	0
n-Decane	3.64532E-16	1.52245E-28	6.08465E-13	3.64532E-16	4.36505E-13
Undecane	8.15140E-17	3.80613E-29	1.78676E-13	8.15140E-17	1.28470E-13
Dodecane	0	0	0	0	0
Tridecane	0	0	0	0	0
Nitrogen	1.32584E-08	7.98203E-23	6.40166E-07	1.32584E-08	4.55100E-07
Carbon Dioxide	0.0908345	1.04622E-17	0.0918365	0.0908345	0.0673988
Hydrogen Sulfide	0.0179013	0.00575872	0.0121314	0.0179013	0.00933407
Mass Flow	**lb/h**	**lb/h**	**lb/h**	**lb/h**	**lb/h**
Water Gas	0	0	0	0	0
Water	0.00247689	8219.85	8219.46	0.0387299	8218.78
Methane	2.50871E-10	3.36130E-18	0.0193717	3.92275E-09	0.0137880
Ethane	3.85282E-10	3.36130E-18	0.0176537	6.02446E-09	0.0125949
Propane	1.01922E-10	1.68065E-18	0.00645253	1.59371E-09	0.00460424
i-Butane	4.86770E-12	5.25203E-20	0.000378085	7.61139E-11	0.000269983
n-Butane	4.04618E-11	4.20162E-19	0.00279917	6.32682E-10	0.00199885
i-Pentane	2.89618E-12	5.25203E-20	0.000252770	4.52862E-11	0.000180629
n-Pentane	2.17603E-13	6.56504E-21	5.94281E-05	3.40255E-12	4.23957E-05
Neohexane	0	0	0	0	0
2,3-Dimethylbutane	0	0	0	0	0
2-Methylpentane	0	0	0	0	0
3-Methylpentane	0	0	0	0	0
n-Hexane	2.08954E-14	1.64126E-21	7.84615E-06	3.26730E-13	5.60335E-06
2,2-Dimethylpentane	0	0	0	0	0
Methylcyclopentane	0	0	0	0	0
2,4-Dimethylpentane	0	0	0	0	0
Benzene	1.86579E-06	3.39644	3.97518	2.91745E-05	3.19411
3,3-Dimethylpentane	0	0	0	0	0
Cyclohexane	0	0	0	0	0
2-Methylhexane	0	0	0	0	0
2,3-Dimethylpentane	0	0	0	0	0
1,1-Dimethylcyclopentane	0	0	0	0	0
3-Methylhexane	0	0	0	0	0
1,t-3-Dimethylcyclopentane	0	0	0	0	0
1,c-3-Dimethylcyclopentane	0	0	0	0	0
2,2,4-Trimethylpentane	0	0	0	0	0
n-Heptane	6.44831E-15	4.10315E-22	3.04248E-06	1.00829E-13	2.17551E-06
Methylcyclohexane	0	0	0	0	0
1,1,3-Trimethylcyclopentane	0	0	0	0	0
2,5-Dimethylhexane	0	0	0	0	0
2,4-Dimethylhexane	0	0	0	0	0
3,3-Dimethylhexane	0	0	0	0	0
1,t-2,c-3-Trimethylcyclopentane	0	0	0	0	0
2,3,4-Trimethylpentane	0	0	0	0	0
Toluene	5.51615E-07	0.997502	1.27145	8.62533E-06	1.00262
2,3-Dimethylhexane	0	0	0	0	0
1,1,2-Trimethylcyclopentane	0	0	0	0	0
2-Methylheptane	0	0	0	0	0
4-Methylheptane	0	0	0	0	0
3,4-Dimethylhexane	0	0	0	0	0
3-Methylheptane	0	0	0	0	0
3-Ethylhexane	0	0	0	0	0
1,c-3-Dimethylcyclohexane	0	0	0	0	0
1,t-4-Dimethylcyclohexane	0	0	0	0	0
1,1-Dimethylcyclohexane	0	0	0	0	0
2,2,4-Trimethylhexane	0	0	0	0	0
Cycloheptane	0	0	0	0	0
n-Octane	1.11670E-16	2.56447E-23	1.47808E-07	1.74613E-15	1.05692E-07
1,t-3-Dimethylcyclohexane	0	0	0	0	0
2,2-Dimethylheptane	0	0	0	0	0
2,4-Dimethylheptane	0	0	0	0	0
2,6-Dimethylheptane	0	0	0	0	0
2,5-Dimethylheptane	0	0	0	0	0
Ethylcyclohexane	0	0	0	0	0
3,3-Dimethylheptane	0	0	0	0	0
2,3,4-Trimethylhexane	0	0	0	0	0
Ethylbenzene	1.54618E-08	0.0369073	0.0452307	2.41769E-07	0.0352731
2,3-Dimethylheptane	0	0	0	0	0
m-Xylene	1.38128E-08	0.0230785	0.0396298	2.15984E-07	0.0302906
p-Xylene	0	0	0	0	0
3,4-Dimethylheptane	0	0	0	0	0
2-Methyloctane	0	0	0	0	0
4-Methyloctane	0	0	0	0	0
3-Methyloctane	0	0	0	0	0
o-Xylene	0	0	0	0	0
1,1,2-Trimethylcyclohexane	0	0	0	0	0
n-Nonane	3.97005E-17	6.41117E-24	4.18909E-08	6.20777E-16	3.00357E-08
Isopropylbenzene	0	0	0	0	0
n-Butylcyclopentane	0	0	0	0	0
n-Propylbenzene	0	0	0	0	0
m-Ethyltoluene	0	0	0	0	0
p-Ethyltoluene	0	0	0	0	0

4-Methylnonane		0	0	0	0	0
2-Methylnonane		0	0	0	0	0
t-Butylbenzene		0	0	0	0	0
Butylcyclohexane		0	0	0	0	0
n-Decane		9.04781E-21	1.25218E-26	5.00973E-11	1.41476E-19	3.59217E-11
Undecane		2.02321E-21	3.13045E-27	1.47111E-11	3.16359E-20	1.05723E-11
Dodecane		0	0	0	0	0
Tridecane		0	0	0	0	0
Nitrogen		3.29079E-13	6.56504E-21	5.27074E-05	5.14564E-12	3.74519E-05
Carbon Dioxide		2.25455E-06	8.60492E-16	7.56127	3.52532E-05	5.54651
Hydrogen Sulfide		4.44316E-07	0.473642	0.998824	6.94754E-06	0.768137

Process Streams		**Breathing**	**Flash**	**Liquids**	**Produced Water w/ Hydrocarbon**	**Working**	**2**
Properties	**Status:**	Solved	Solved	Solved	Solved	Solved	Solved
Phase: **Aqueous Liquid**	**From Block:**	**TANK-100**	**TANK-100**	**TANK-100**	**--**	**TANK-100**	**VLVE-100**
	To Block:	**--**	**--**	**--**	**VLVE-100**	**--**	**TANK-100**
Property	**Units**						
Temperature	°F	73.4428	73.4428		97.2586	73.4428	97.1263
Pressure	psia	13.26	13.26		19.6959	13.26	14.6959
Mole Fraction Vapor	%	0	0		0	0	0
Mole Fraction Light Liquid	%	0	100		100	0	100
Mole Fraction Heavy Liquid	%	100	0		0	100	0
Phase Mole Fraction	%	1.21369	100		99.5378	1.21369	99.5152
Molecular Weight	lb/lbmol	18.0403	18.0234		18.0352	18.0403	18.0305
Mass Density	lb/ft^3	62.2648	62.2510		61.9988	62.2648	61.9967
Molar Flow	lbmol/h	0.000137583	456.340		456.518	0.00215131	456.414
Mass Flow	lb/h	0.00248204	8224.77		8233.40	0.0388104	8229.39
Vapor Volumetric Flow	ft^3/h	3.98626E-05	132.123		132.799	0.000623312	132.739
Liquid Volumetric Flow	gpm	4.96989E-06	16.4725		16.5568	7.77116E-05	16.5493
Std Vapor Volumetric Flow	MMSCFD	1.25305E-06	4.15617		4.15779	1.95933E-05	4.15684
Std Liquid Volumetric Flow	sgpm	4.96366E-06	16.4434		16.4646	7.76143E-05	16.4553
Compressibility		0.000671526	0.000671043		0.000958631	0.000671526	0.000715282
Specific Gravity		0.998333	0.998112		0.994069	0.998333	0.994036
API Gravity		9.96085	9.99322		9.96354	9.96085	9.97279
Enthalpy	Btu/h	-16.9127	-5.60973E+07		-5.59332E+07	-264.455	-5.59219E+07
Mass Enthalpy	Btu/lb	-6814.04	-6820.53		-6793.45	-6814.04	-6795.39
Mass Cp	Btu/(lb*°F)	0.977971	0.978251		0.976747	0.977971	0.976850
Ideal Gas CpCv Ratio		1.32895	1.32904		1.32814	1.32895	1.32817
Dynamic Viscosity	cP	0.951221	0.953391		0.720380	0.951221	0.721757
Kinematic Viscosity	cSt	0.953714	0.956102		0.725366	0.953714	0.726777
Thermal Conductivity	Btu/(h*ft*°F)	0.347613	0.348393		0.358036	0.347613	0.358209
Surface Tension	lbf/ft	0.005001807	0.00500592		0.00482695	0.005001807	0.00482863
Net Ideal Gas Heating Value	Btu/ft^3	0.875196	0.467530		0.581419	0.875196	0.463276
Net Liquid Heating Value	Btu/lb	-1039.44	-1049.39		-1045.94	-1039.44	-1048.81
Gross Ideal Gas Heating Value	Btu/ft^3	51.1909	50.7909		50.8889	51.1909	50.7725
Gross Liquid Heating Value	Btu/lb	18.9684	10.1731		12.5900	18.9684	10.0374

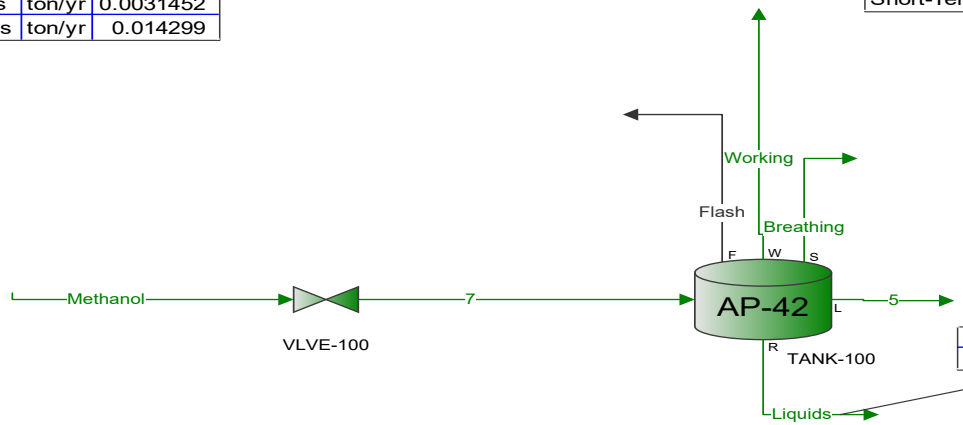
Targa Midstream Services LLC
Copperhead GP
Annual Methanol Working/Breathing/Flash Losses

Annual Emissions

Names	Units	TANK-100
Working Losses	ton/yr	0.0031452
Standing Losses	ton/yr	0.014299

Hourly Emissions

Names	Units	TANK-100
Short-Term Working Losses	lb/h	1.5011



Properties	Liquids	
Std Liquid Volumetric Flow (Total)	0.274	bbl/d

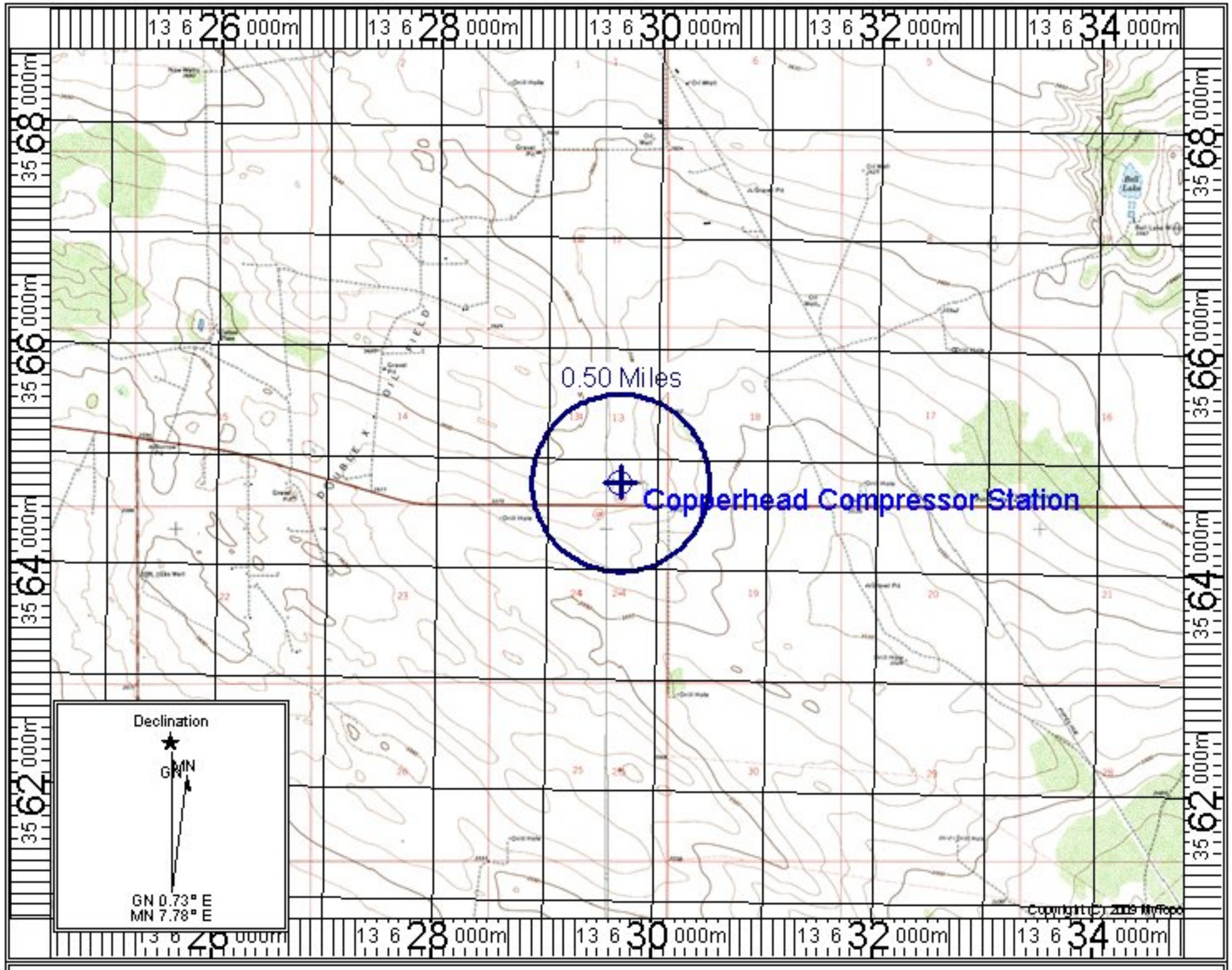
Names	Units	Methanol	Breathing	Flash	Working	7	5	Liquids
Temperature	°F	52*	77.775	77.775	77.775	52.072	77.775	77.775
Pressure	psia	29.196*	13.26	13.26	13.26	14.696*	13.26	13.26
Std Vapor Volumetric Flow	MMSCFD	0.00090435	9.2793e-07	0	2.0411e-07	0.00090435	9.505e-08	0.00090322
Std Liquid Volumetric Flow	bbl/d	0.27397*	0.00028112	0	6.1834e-05	0.27397	2.8795e-05	0.27363
Gross Ideal Gas Heating Value	Btu/ft^3	866.7	866.7		866.7	866.7	866.7	866.7
Net Ideal Gas Heating Value	Btu/ft^3	766.1	766.1		766.1	766.1	766.1	766.1

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	



Map Name: BELL LAKE (NM)
Print Date: 06/21/18

Scale: 1 inch = 4,761 ft.
Map Center: 13 0629614 E 3564793 N

Horizontal Datum: WGS84

SCALE 1:57142

0 10000 20000

FEET

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.

New Mexico Municipalities (04-2023)

Municipality	Mayor (as of 4-2023)	County	2010 Population	2020 Population	% Change (2010 to 2020)	Incorporation Date
Alamogordo	Susan Payne	Otero	30,403	31,361	3%	1912
Albuquerque	Timothy Keller	Bernalillo	545,852	564,648	3%	1885
Angel Fire	Jo Mixon	Colfax	1,216	1,211	0%	1986
Anthony	Diana Murillo-Trujillo	Dona Ana	9,360	8,701	-7%	2010
Artesia	Jon Henry	Eddy	11,301	12,844	14%	1905
Aztec	Michael Padilla	San Juan	6,763	6,196	-8%	1905
Bayard	Chon Fierro	Grant	2,328	2,124	-9%	1938
Belen	Robert Noblin	Valencia	7,269	7,386	2%	1918
Bernalillo	Jack Torres	Sandoval	8,320	9,084	9%	1948
Bloomfield	Cynthia Atencio	San Juan	8,112	7,407	-9%	1958
Bosque Farms	Russel Walkup	Valencia	3,904	4,053	4%	1974
Capitan	Ron Lowrance	Lincoln	1,489	1,396	-6%	1937
Carlsbad	Dale Janway	Eddy	26,138	32,248	23%	1918
Carrizozo	Ray Dean	Lincoln	996	968	-3%	1917
Causey	Kris King	Roosevelt	104	69	-34%	1959
Chama	Ernest Vigil	Rio Arriba	1,022	914	-11%	1961
Cimarron	Matthew Gonzales	Colfax	1,021	802	-21%	1910
Clayton	Ernest Sanches	Union	2,980	2,731	-8%	1912
Cloudcroft	Bill Denney	Otero	674	768	14%	1948
Clovis	Michael Morris	Curry	37,775	38,244	1%	1909
Columbus	Esequiel Salas	Luna	1,664	1,451	-13%	1913
Corona	Samuel Seely	Lincoln	172	130	-24%	1947
Corrales	James Fahey, Jr., MD	Sandoval	8,329	8,517	2%	1971
Cuba	Denny Herrera	Sandoval	731	630	-14%	1964
Deming	Benny Jasso	Luna	14,855	14,787	0%	1902
Des moines	Jonathan Valdez	Union	143	109	-24%	1915
Dexter	Mitch Daubert	Chaves	1,266	1,079	-15%	1903
Dora	Michey Burkett	Roosevelt	133	117	-12%	1959
Eagle Nest	Jeff Carr	Colfax	290	328	13%	1976
Edgewood	Audrey Jaramillo	Santa Fe	3,735	6,183	66%	1999
Elephant Butte	Philip Mortensen	Sierra	1,431	1,432	0%	1998
Elida	Durwood Dixon	Roosevelt	197	160	-19%	1907
Encino	Boyd Herrington	Torrance	82	51	-38%	1938
Espanola	John Ramon	Rio Arriba	10,224	10,514	3%	1925
Estancia	Nathan Dial	Torrance	1,655	1,487	-10%	1909
Eunice	Billy Hobbs	Lea	2,922	3,065	5%	1936
Farmington	Nate Duckett	San Juan	45,877	46,596	2%	1901
Floyd	Colin Chandler	Roosevelt	133	85	-36%	1959
Folsom	Stephanie King	Union	56	43	-23%	1908
Fort Sumner	Louie Gallegos	De Baca	1,031	877	-15%	1916
Gallup	Louie Bonaguidi	McKinley	21,678	21,765	0%	1891
Grady	Wesley Shafer	Curry	107	88	-18%	1936
Grants	Erik Garcia	Cibola	9,182	9,141	0%	1933
Grenville	Judy Jacobs	Union	38	22	-42%	1920
Hagerman	Tony Garcia	Chaves	1,257	982	-22%	1905
Hatch	James Whitlock	Dona Ana	1,648	1,550	-6%	1927
Hobbs	Sam Cobb	Lea	34,122	40,618	19%	1937
Hope	Bill Fletcher	Eddy	105	114	9%	1910
House	Sherman Martin	Quay	68	55	-19%	1959
Hurley	Ed Stevens	Grant	1,297	1,262	-3%	1956
Jal	Stephen Aldridge	Lea	2,047	2,196	7%	1950
Jemez Springs	Roger Sweet	Sandoval	250	197	-21%	1955
Kirtland	Mark Duncan	San Juan	7,875	580	-93%	2015
Lake Arthur	Ysidro Salazar	Chaves	436	382	-12%	1906
Las Cruces	Ken Miyagishima	Dona Ana	97,618	111,738	14%	1907
Las Vegas	Louie Trujillo	San Miguel	13,753	13,163	-4%	1888
Logan	David Babb	Quay	1,042	974	-7%	1959

Municipality	Mayor (as of 4-2023)	County	2010 Population	2020 Population	% Change (2010 to 2020)	Incorporation Date
Lordsburg	Glenda Greene	Hidalgo	2,797	2,318	-17%	1916
Los Alamos	Randall Tyti	Los Alamos	17,744	12,978	-27%	1969
Los Lunas	Charles Griego	Valencia	14,835	17,370	17%	1928
Los Ranchos	Don Lopez	Bernalillo	6,024	5,881	-2%	1958
Loving	Pete Estrada	Eddy	1,413	1,386	-2%	1945
Lovington	David Ttrujillo	Lea	11,009	11,678	6%	1917
Magdalena	Richard Rumpf	Socorro	938	821	-12%	1918
Maxwell	Shantelle Gallegos	Colfax	254	230	-9%	1912
Melrose	Barry Green	Curry	651	612	-6%	1916
Mesilla	Nora Barraza	Dona Ana	2,196	1,804	-18%	1959
Milan	Felix Gonzales	Cibola	3,245	2,531	-22%	1957
Moriarty	Ted Moriarty	Torrance	1,910	1,908	0%	1953
Mosquero	Victor Vihil	Harding	93	100	8%	1922
Mountainair	Peter Nieto	Torrance	928	869	-6%	1903
Pecos	Telesfor Benavidez	San Miguel	1,398	1,377	-2%	1953
Peralta	Bryan Olguin	Valencia	3,660	3,380	-8%	2007
Portales	Ronald Jackson	Roosevelt	12,280	12,109	-1%	1909
Questa	John Ortega	Taos	1,770	1,724	-3%	1964
Raton	Neil Segotta	Colfax	6,885	6,031	-12%	1891
Red River	Linda Calhoun	Taos	477	537	13%	1971
Reserve	Hilda Kellar	Catron	289	290	0%	1974
Rio Communities	Joshua Ramsell	Valencia	5,000	4,965	-1%	2013
Rio Rancho	Greggory Hull	Sandoval	87,521	104,257	19%	1981
Roswell	Timothy Jennings	Chaves	48,366	48,541	0%	1903
Roy	Matthew Baca	Harding	234	194	-17%	1916
Ruidoso	Lynn Crawford	Lincoln	8,029	7,693	-4%	1945
Ruidoso Downs	Dean holman	Lincoln	2,815	2,632	-7%	1947
San Jon	Billie jo Barnes	Quay	216	195	-10%	1946
San Ysidro	Steve Lucero	Sandoval	193	166	-14%	1967
Santa Clara	Richard Bauch	Grant	1,686	1,624	-4%	1947
Santa Fe	Alan Webber	Santa Fe	67,947	87,684	29%	1891
Santa Rosa	Nelson Kotiar	Guadalupe	2,848	2,846	0%	1914
Silver City	Ken Ladner	Grant	10,315	9,689	-6%	1878
Socorro	Ravi Bhasker	Socorro	9,051	8,549	-6%	1894
Springer	Boe Lopez	Colfax	1,047	939	-10%	1910
Sunland Park	Javier Perea	Dona Ana	14,106	16,807	19%	1983
T or C	Amanda Forrister	Sierra	6,475	6,064	-6%	1916
Taos	Pascualito Maestas	Taos	5,716	6,577	15%	1934
Taos Ski Valley	Christof Brownell	Taos	69	79	14%	1996
Tatum	Amy Gutierrez	Lea	798	711	-11%	1948
Texico	Jerry Bradley	Curry	1,130	938	-17%	1908
Tijeras	Jake Bruton	Bernalillo	541	465	-14%	1973
Tucumcari	Ruth Ann Litchfield	Quay	5,363	5,252	-2%	1908
Tularosa	Margaret Trujillo	Otero	2,842	2,610	-8%	1916
Vaugn	Roman Garcia	Guadalupe	446	282	-37%	1919
Virden	Jacob Bigler	Hidalgo	152	125	-18%	1932
Wagon Mound	Andres Martinez	Mora	314	264	-16%	1918
Willard	David Dean	Torrance	253	201	-21%	1910
Williamsburg	Deb Stubblefield	Sierra	449	461	3%	1949

Click to Print

Owner Information

Owner # 206138 **District** 190
VERSADO GAS PROCESSORS LLC
KE ANDREWS & CO %
2424 RIDGE RD

ROCKWALL TX 75087

Estimated Taxes for Owner

Estimated Tax	Estimated Year used
$.	

Calculate Estimated Tax

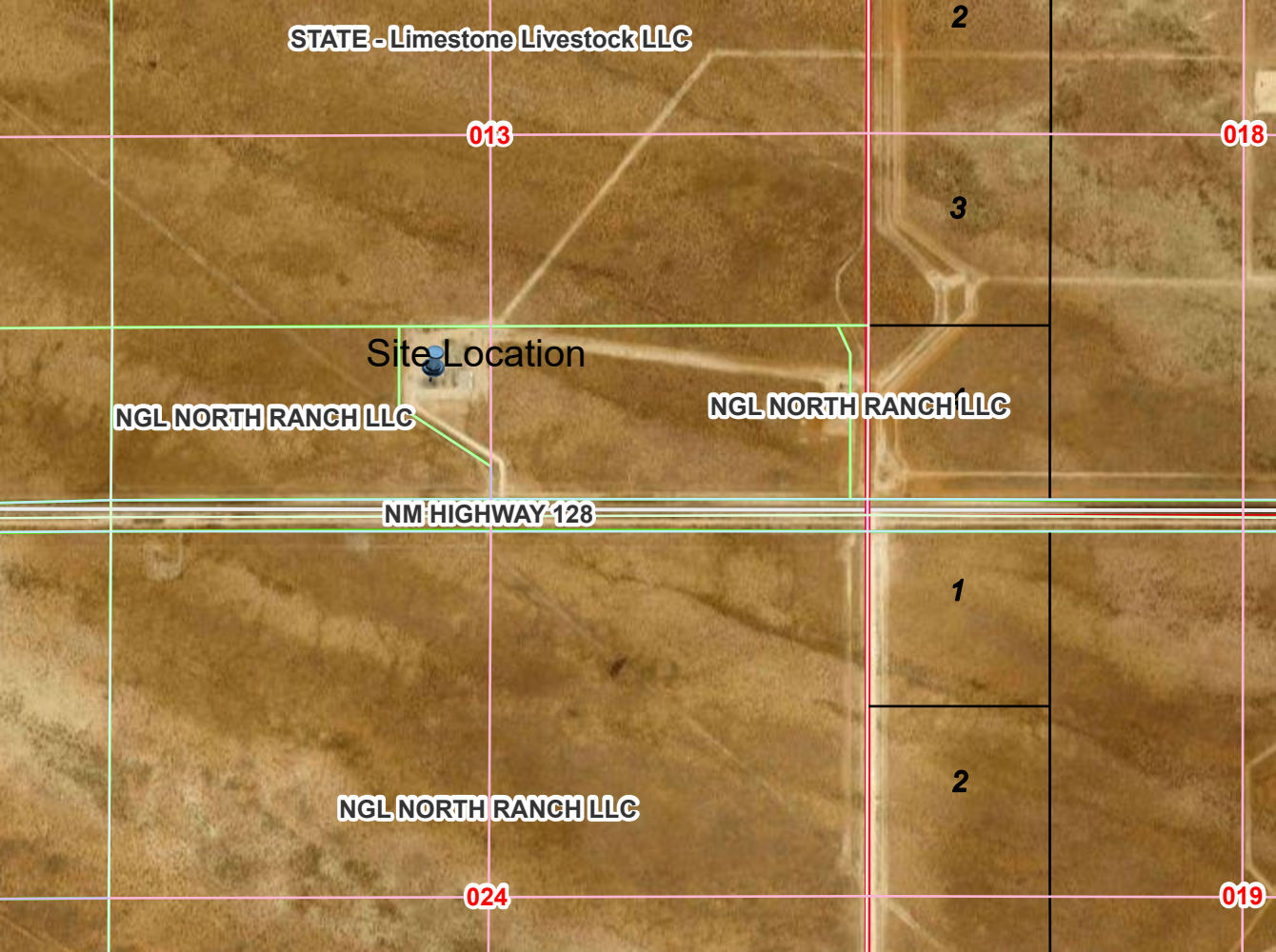
Recap Value Information

Central Full Value	46583352	**Full Value**	46583352
Land Full Value	0	**Taxable Value**	15527784
Improvements Full value	0	**Exempt Value**	0
Personal Property Full Value	0	**Net Value**	15527784
Manufactured Home Full Value	0		
Livestock Full Value	0		

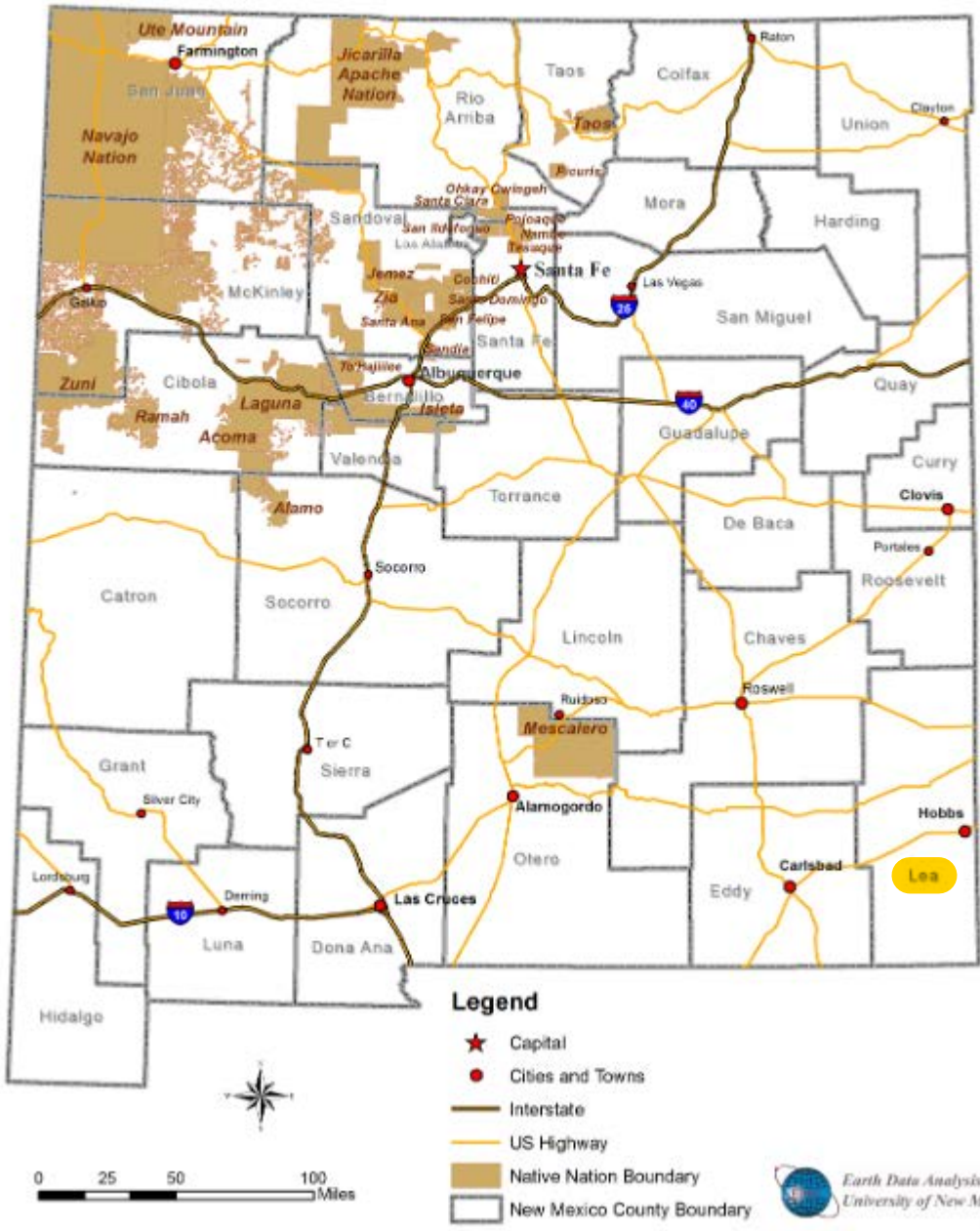
Property Information

Property Code 4000051757005
Book 2132 **Page** 32 **Reception#** 22911
Physical Address
Bldg Apt
Section 13 **Township** 24 S **Range** 32 E

80.00 AC LOC IN S2S2
BEG AT THE NE CORNER OF THE SE4
BEARS N89D32'53"E 183.74'AND
N0D20'02"W 1320.33';
TH S24D46'49"E 215.77',
TH S0D20'02"E 1006.52',
TH S89D42'18"W 2503.90',
TH N0D20'02"W 224.49',
TH N57D26'36"W 763.82',
TH N0D20'02"W 555.68',
TH N89D32'53"W 3056.00', TO THE POB
8/19/10-KELLER, JAMES & LANETT
10/11/11-WRIGHT, WILLIAM J &
MARJORIE TRUST
12/22/17 BK 2, PG 487, MCCLOY LAND
DIVISION
3/01/17 BK 2129/788 MEMORANDUM OF
OPTION TO PURCHASE AGREEMENT
04/09/18-MC CLOY, MARK & ANNETTE
TRUST
04/09/18 REDESC FROM #206181


STATE - Limestone Livestock LLC
2
013
018
3
Site Location
NGL NORTH RANCH LLC
NGL NORTH RANCH LLC
NM HIGHWAY 128
1
2
NGL NORTH RANCH LLC
024
019

Native Nation Lands
New Mexico



NOTICE OF AIR QUALITY PERMIT APPLICATION

Targa Midstream Services, LLC announces its application submittal to the New Mexico Environment Department for an air quality permit for the modification of its gas plant. The expected date of application submittal to the Air Quality Bureau is July 21, 2025.

The exact location for the facility, known as Copperhead Gas Plant, is at latitude 32.212128 North and longitude -103.624164 West. The approximate location of this facility is 25.9 miles east of Malaga in Lea County.

The proposed modification consists of adding process trains 1 and 2 at the facility.

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)	59.0	22.0
PM_{10}	13.0	22.0
$PM_{2.5}$	6.0	22.0
Sulfur Dioxide (SO_2)	2,788.0	99.0
Nitrogen Oxides (NO_x)	4,000.0	166.0
Carbon Monoxide (CO)	7,958.0	228.0
Volatile Organic Compounds (VOC)	2,330.0	116.0
Hydrogen Sulfide (H2S)	30.0	3.0
Total sum of all Hazardous Air Pollutants (HAPs)	23.0	12.0
Toxic Air Pollutant (TAP)	n/a	n/a
Green House Gas Emission as Total CO_2e	n/a	390,000

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: Targa Midstream Services, LLC, P.O. Box 1909, Eunice, NM 88231.

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.

General information about air quality and the permitting process, and links to the regulations can be found at the Air Quality Bureau's website: www.env.nm.gov/air-quality/permitting-section-home-page/. The regulation dealing with public participation in the permit review process is 20.2.72.206 NMAC.

Atención
Este es un aviso de la oficina de Calidad del Aire del Departamento del Medio Ambiente de Nuevo México, acerca de las emisiones producidas por un establecimiento en esta área. Si usted desea información en español, por favor comuníquese con esa oficina al teléfono 505-629-3395.

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.

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 16, 2025
and ending with the issue dated
July 16, 2025.

Publisher

Sworn and subscribed to before me this 16th day of July 2025.

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.

LEGAL NOTICE
July 16, 2025

NOTICE OF AIR QUALITY PERMIT APPLICATION

Targa Midstream Services, LLC announces its application submittal to the New Mexico Environment Department for an air quality permit for the modification of its gas plant. The expected date of application submittal to the Air Quality Bureau is July 21, 2025.

The exact location for the facility, known as Copperhead Gas Plant, is at latitude 32.212128 North and longitude -103.624164 West. The approximate location of this facility is 25.9 miles east of Malaga in Lea County.

The proposed modification consists of adding process trains 1 and 2 at the facility.

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Pollutant:	Pounds per hour	Tons per year
Particulate Matter (PM)	59.0	22.0
PM_{10}	13.0	22.0
$PM_{2.5}$	6.0	22.0
Sulfur Dioxide (SO_2)	2,788.0	99.0
Nitrogen Oxides (NO_x)	4,000.0	166.0
Carbon Monoxide (CO)	7,958.0	228.0
Volatile Organic Compounds (VOC)	2,330.0	116.0
Hydrogen Sulfide (H2S)	30.0	3.0
Total sum of all Hazardous Air Pollutants (HAPs)	23.0	12.0
Toxic Air Pollutant (TAP)	n/a	n/a
Green House Gas Emission as Total CO_2e	n/a	390,000

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: Targa Midstream Services, LLC, P.O. Box 1909, Eunice, NM 88231.

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.

General information about air quality and the permitting process, and links to the regulations can be found at the Air Quality Bureau's website: www.env.nm.gov/air-quality/permitting-section-ome-page/. The regulation dealing with public participation in the permit review process is 20.2.72.206 NMAC.

Atención
Este es un aviso de la oficina de Calidad del Aire del Departamento del Medio Ambiente de Nuevo México, acerca de las emisiones producidas por un establecimiento en esta área. Si usted desea información en español, por favor comuníquese con esa oficina al teléfono 505-629-3395.

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.
#00302641

67111991 00302641

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

Affidavit of Publicat

STATE OF NEW MEXICO
COUNTY OF LEA

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

Beginning with the issue dated
July 16, 2025
and ending with the issue date
July 16, 2025.

Publisher

Sworn and subscribed to before me th
16th day of July 2025.

Business Manager

My commission expires
January 29, 2027
(Seal) STATE OF NEW MEXICO
NOTARY PUBLIC
GUSSIE RUTH BLACK
COMMISSION # 1087526
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Caregivers

from PAGE 1

a personal care nurse who gave them supplies, such as adult diapers, and advice on items to purchase, such as a chair for the shower. And for about a year, Yang was able to work for a personal care agency and earn $1,000 a month caring for his mom — money that went toward her medication and family needs.

But at the beginning of 11th grade, a change to his mom's insurance ended her personal care benefit, sending him into a runaround with his county's Medicaid office in Minnesota. "For a solid month I was on my phone, on hold, in the back of the class, waiting for the 'hello,'" he said. "I'd be in third period, saying, 'Mr. Stepan, can I step out?'"

A report published in May by the U.S. Government Accountability Office reminded states that National Family Caregiver Support Program grants can be used to assist caregivers under 18. However, the future of those grants remains unclear: They are funded through the Older Americans Act, which is awaiting reauthorization; and the Administration for Community Living, which oversees the grants, was nearly halved in April as part of the reorganization of the Department of Health and Human Services under President Donald Trump.

Additionally, if Congress approves proposed cuts to Medicaid, one of the first casualties likely will be states' home- and community-based service programs that provide critical financial relief to family caregivers, said Andrew Olenski, an economist at Lehigh University specializing in long-term health care.

Such programs, which differ by state but are paid for with federal dollars, are designed to ensure that Medicaid-eligible people in need of long-term care can continue living at home by covering in-home personal and nursing care. In 2021, they served almost 5% of all Medicaid participants, costing about $158 billion.

BY LAW, MEDICAID IS required to cover necessary long-term care in a nursing home setting but not all home or community care programs. So, if states are forced to make cuts, those programs are vulnerable to being scaled back or eliminated.

If an aide who makes daily home visits, for example, is no longer an option, family caregivers could step in, Olenski said. But he pointed out that not all patients have adult children to care for them, and not all adult children can afford to step away from the workforce. And that could put more pressure on any kids at home.

"These things tend to roll downhill," Olenski said.

Some studies show benefits to young people who step into caregiving roles, such as more self-confidence and improved family relationships. Yang said he feels more on top of things than his peers: "I have friends worrying about how to land a job interview, while I've already applied to seven or eight other jobs."

But for many, the cost is steep. Young caregivers report more depression, anxiety, and stress than their peers. Their physical health tends to be worse, too, related to diet and lack of attention to their own care. And caregiving often becomes a significant drag on their education: A large study found that 15- to 18-year-old caregivers spent, on average, 42 fewer minutes per day on educational activities and 31 fewer minutes in class than their peers.

Schools in several states are taking notice. In Colorado, a statewide survey recently included its first question about caregiving and found that more than 12% of high schoolers provide care for someone in their home who is chronically ill, elderly, or disabled.

Rhode Island's education department now requires every middle and high school to craft a policy to support caregiving students after a study published in 2023 found 29% of middle and high school students report caring for a younger or older family member for part of the day, and 7% said the role takes up most of their day. Rates were higher for Hispanic, Asian, and Black students than their white peers.

The results floored Lindsey Tavares, principal of Apprenticeship Exploration School, a charter high school in Cranston. Just under half her students identified as caregivers, she said. That awareness has changed conversations when students' grades slip or the kids stop showing up on time or at all.

"We know now that this is a question we should be asking directly," she said.

Students have shared stories of staying home to care for an ill sibling when a parent needs to work, missing school to translate doctors' appointments, or working nights to pitch in financially, she said. Tavares and her team see it as their job to find an approach to help students persist. That might look like connecting the student to resources outside the school, offering mental health support, or working with a teacher to keep a student caught up.

"We can't always solve their problem," Tavares said. "But we can be really realistic about how we can get that student to finish high school."

Rhode Island officials believe their state is the first to officially support caregiving students — work they're doing in partnership with the Florida-based American Association for Caregiving Youth. In 2006, the association formed the Caregiving Youth Project, which works with schools to provide eligible students with peer group support, medical care training, overnight summer camp, and specialists tuned in to each student's specific needs. This school year, more than 700 middle and high school students took part.

"For kids, it's important for them to know they're not alone," said Julia Belkowitz, a pediatrician and an associate professor at the University of Miami who has studied student caregivers. "And for the rest of us, it's important, as we consider policies, to know who's really doing this work."

In St. Paul, Joshua Yang had hoped to study civil engineering at the University of Minnesota, but decided instead to attend community college in the fall, where his schedule will make it simpler to continue living at home and caring for his mom.

But he sees some respite on the horizon as his sisters, now 12 and 13, prepare to take on a greater share of the caregiving. They're "actual people" now with personalities and a sense of responsibility, he said with a laugh.

"It's like, we all know that we're the most meaningful people in our mom's life, so let's all help out," he said.

KFF Health News is a national newsroom that produces in-depth journalism about health issues and is one of the core operating programs at KFF—an independent source of health policy research, polling, and journalism. Learn more about KFF.



CALEB GALLEGOS/NEWS-SUN

Fire Marshal Tony Alarcon, along with New Mexico State Police, secure the person playing the "upset dad" during the Active School Shooter drill Tuesday.

Drill

from PAGE 1

life-threatening situation.

Committed to their role as victims inside the middle school, around 50 members from the community, many Ford recruited from his church, gathered to not just aid and challenge the different agencies, but to also learn the dos-and-don'ts of an active shooter situation.

To add a flavor of reality to the exercise, the volunteers were told to challenge the agencies by blocking their way in a panic stampede as they moved, clutching on to officers as they tried to clear rooms, acting severely wounded and simply causing unpredictable situations for the agencies.

Briefed on the operation, agencies all met at Hobbs Fire Station 2 to go over what needed to take place for a successful operation, and discussed roles and duties of each department.

With a goal to have a unified operation and open communication between all agencies, Ford reminded the group of men and women to work together and treat the situation as a real-life emergency.

A reminder many didn't need.

Preparing for the drill since March, agents and officers had a look of determination as they began to get in the zone and go over last minute adjustments as time approached

Around 10 a.m., with radios ready, civilians in place and the pretend school shooter upset and in character — it was time to "disco."

With the code word given over the radio the shooter, HPD officer Shane Blainey, began his deadly charade and walked into the middle school with a shotgun filled with blank rounds.

Shooting off blank rounds as he entered the school, some civilians were tasked to act as victims who had either been shot and wounded or killed.

With the call of a man with a gun in the front of the middle school coming from a civilian actor, Lea County Communication Authority soon dispatched law enforcement to the scene.

Swinging into action with full force, a few minutes after the call was sent by dispatch, officers arrived and rushed into the school with training guns drawn and ready.

Treating the situation as a real life threat, officers quickly and carefully began searching the school for the shooter and securing areas.

The first officers on scene immediately began clearing the halls of the middle school and looking for the suspect, as the civilian actors frantically screamed and panicked.

In the midst of civilian panic, officers and agents had to direct the mass of people to safety while also dealing with the active threat of the shooter.

As other officers and agents arrived on scene, the group began to clear all the halls together as one team, and eventually met up with the first officers on scene.

As the halls for the school were still being cleared by officers and agents, rescue and medics went in alongside the second wave of officers and agents to tend to any injuries, a tactic Ford said isn't normally used.

Without hesitating, medics and rescue swiftly began dragging the injured to safety and made sure frantic civilians got to safety.

After his rampage through the school led him to corner himself in the middle school library, the shooter began a shoot out with officers and agents.

Acting as one unit and working together, officers and agents "linked" at the doorway and then entered the library together.

Using their training, officers disarmed the shooter, placed him under arrest and relayed the information to the other agencies.

Constantly challenging his people throughout the drill, Ford continued to add evolving situations to the senerio to keep his people alert, and even added a disgruntled dad character to the mix.

After the shooter was apprehended, Ford queued for an officer playing a unsettled dad with a weapon to enter the situation, a situation Ford said he believes will happen 99 percent of the time.

Officers and agents quickly reacted to the situation and apprehended the dad.

With all weapons and shooters cleared, all agencies switched to rescue mode and worked together to help those wounded or injured.

Giving every agency the chance to feel what a real situation would be like, 20 of the volunteers played victims who suffered a gun shot wound that rescue and EMS had to tend to.

The middle school gym was turned into a temporary emergency room with medics treating and preparing victims for transportation to Covenant Health Hobbs Hospital.

To really drive home the realness of the drill AeroCare even landed two helicopter in the Coronado Elementary field near the middle school.

Ford said he and Battalion Chief Chris Henry were happy with how the drill played out, and said the simulations also pointed out areas where they needed to improve.

Ford said the drill is important to practice because school shootings happen in smaller communities than Hobbs, and it is important for all agencies to work together in moments like that because "we are all out here when it happens."

Ford has plans to ramp up the simulation to a more realistic one, and hope to use the old Heizer Middle School for the training grounds in the future.

But the best news of all was there were no actual injuries during the drill.

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PUBLIC SERVICE ANNOUNCEMENT

Targa Midstream Services LLC announces its application to the New Mexico Environment Department for an air quality permit for the modification of its gas plant. The proposed modification consists of installing process train 1 and 2. The expected date of application submittal to the Air Quality Bureau is July 21, 2025. This notice is a requirement according to New Mexico air quality regulations.

The exact location for the facility, known as the Copperhead Gas Plant, is at latitude 32.212128 North and longitude -103.624164 West. The approximate location of this facility is roughly 25.9 East of Malaga, NM, in Lea County.

The site will be a natural gas processing plant.

The owner and/or operator of the Facility is:
Targa Midstream Services LLC
PO Box 1909
Eunice, NM 88231

Notices were posted at the Copperhead Gas Plant site and the following three locations:

Woolworth Community Library
100 E. Utah
Jal, NM 88252

Jal City Hall
710 W. Wyoming Ave.
Jal, NM 88252

US Post Office
111 South Fourth Street
Jal, NM 88252

The address for submitting comments to the NMED is as follows:

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

From: Aaron Forrister
To: Laura Worthen-Lodes
Subject: Re: PSA Needed As Soon As Possible
Date: Monday, July 14, 2025 1:51:07 PM
Attachments: Outlook-hqn4twhx.png
CREDIT CARD FORM.docx

Hi Laura. Yes we can.

We can run it Wednesday July 16th on KZOR.

The fee is $75 for one time.

I have attached the credit card form. Please fill out the attached form and return to me. Thank you!

Aaron Forrister, CRMC

New Mexico Market Manager
KZOR-KIXN-KPZA-KEJL-KLEA-KBIM FM-KBIM
575-318-7217 mobile
575-397-4969 office
575-393-4310 fax
619 North Turner
Hobbs, NM 88240

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From: Laura Worthen-Lodes <Laura.Worthen-Lodes@Altamira-US.com>
Sent: Monday, July 14, 2025 12:47 PM
To: Aaron Forrister <aaron@noalmark.com>
Cc: Andries, Robert L. <randries@targaresources.com>; Angie Dawson <Angie.Dawson@altamira-us.com>
Subject: RE: PSA Needed As Soon As Possible

Hi Aaron,
My company is doing an air application for our client Targa. It is for their Copperhead Gas Plant. The

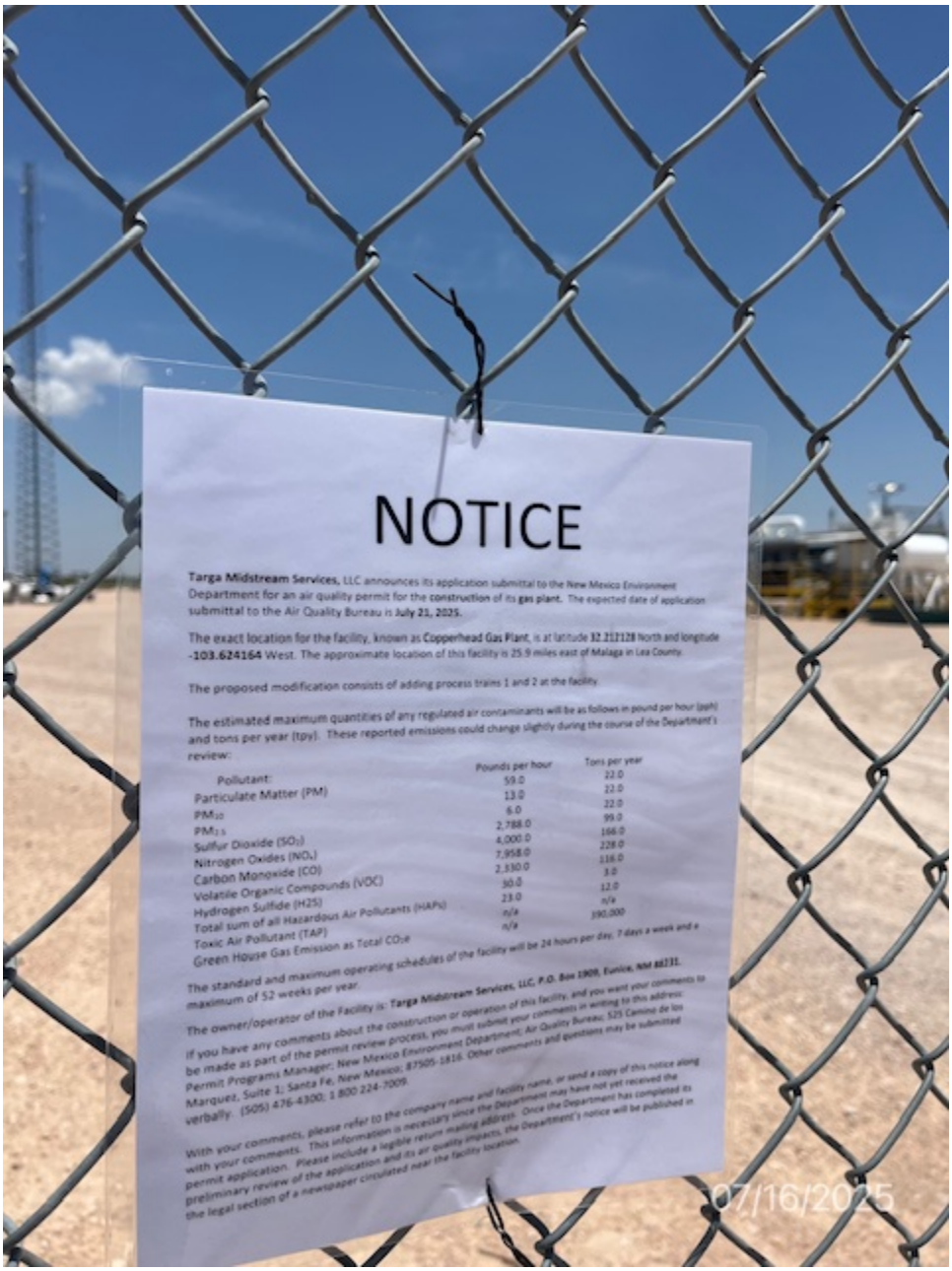
application requires a public
service announcement on a local station that services the Lea county area. The attached announcement will only need to run
one time. Is this something that you can help with? We need it run prior to next Monday 7/21.

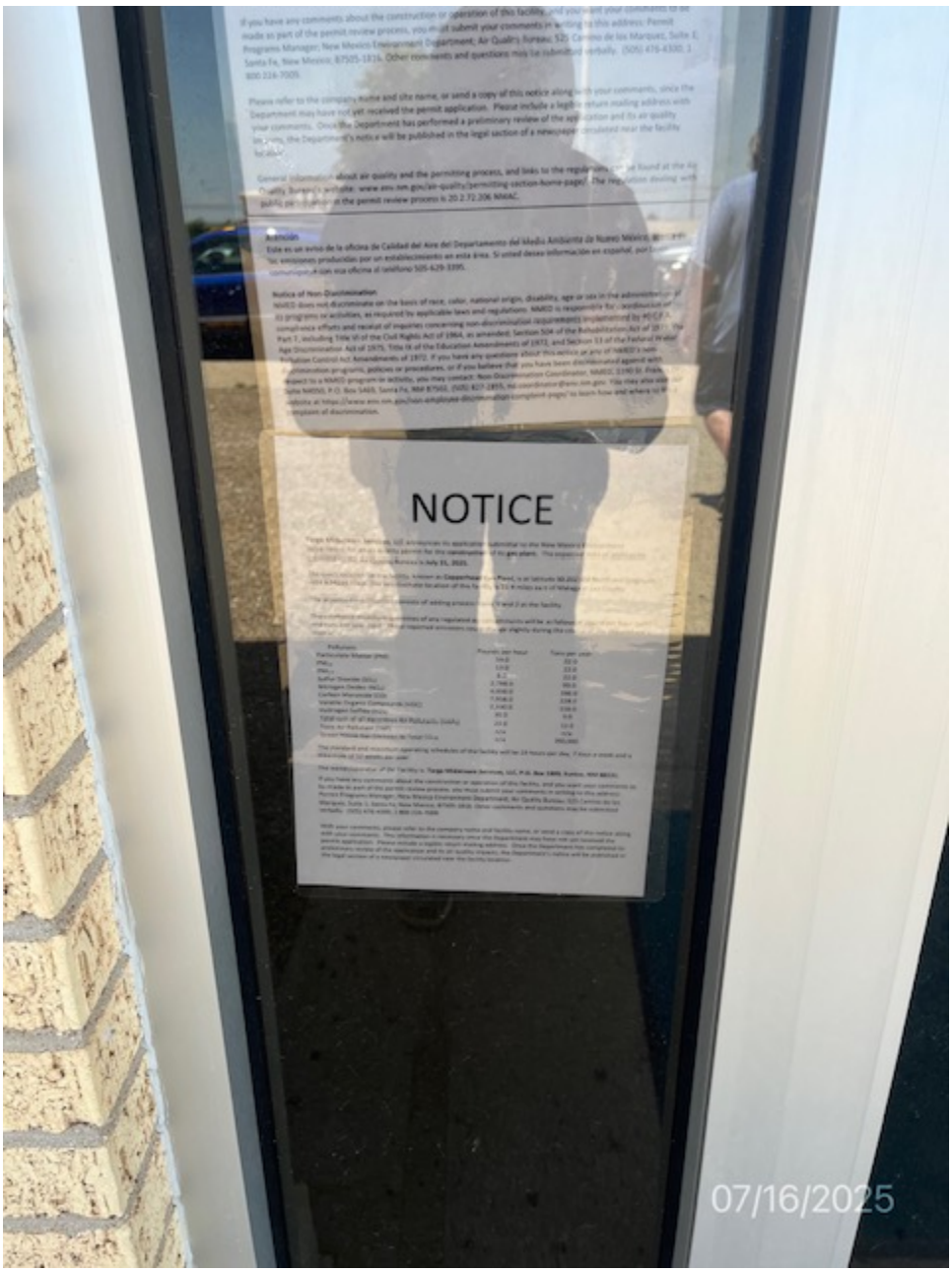
Thanks,

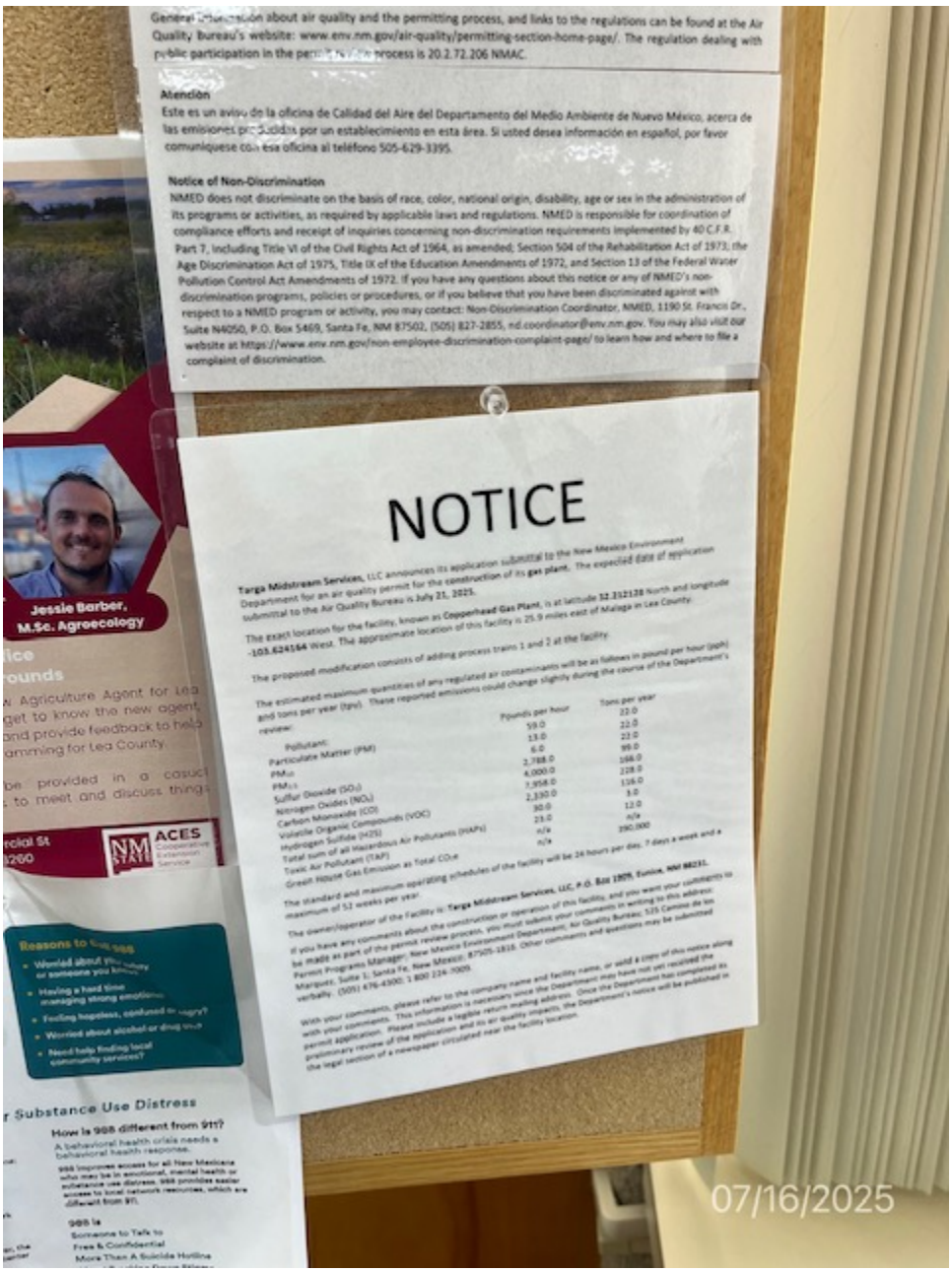
Laura Worthen Lodes, PE
Chief Engineering Officer | O 405.702.1618 | C 405.919.4129

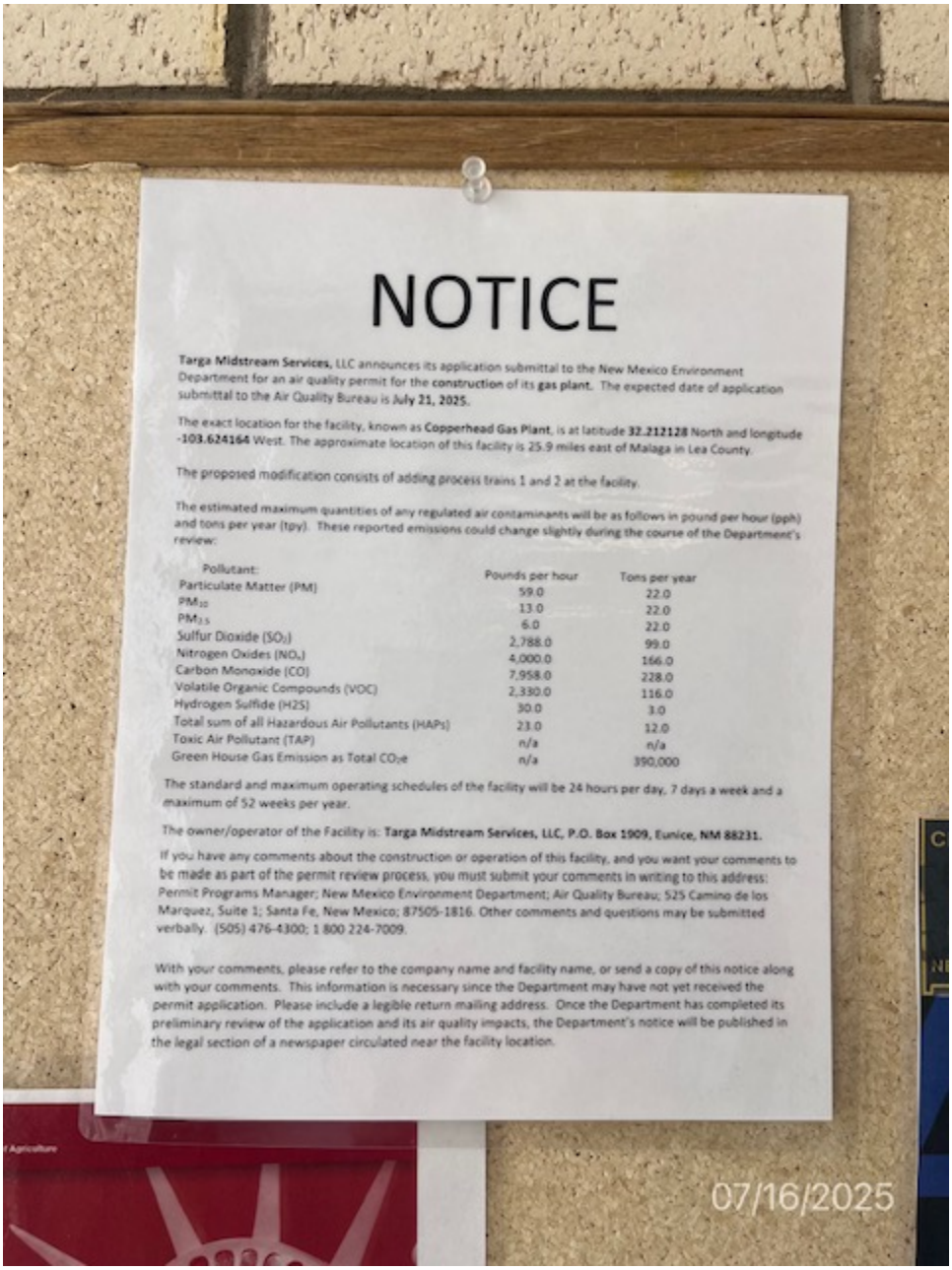
Laura Worthen-Lodes

From: Groves, Amber L. <agroves@targaresources.com>
Sent: Wednesday, July 16, 2025 3:26 PM
To: Andries, Robert L.
Cc: Reynolds, Sylwia A.
Subject: Copperhead Photos




NOTICE
07/16/2025


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Total sum of all Hazardous Air Pollutants (HAPs) | 23.0 | n/a
Toxic Air Pollutant (TAP) | n/a | 390,000
Green House Gas Emission as Total CO2e | n/a |
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: Targa Midstream Services, LLC, P.O. Box 1909, Eunice, NM 88231.
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.
With your comments, please refer to the company name and facility name, or valid a copy of this notice along with your comments. This information is necessary since the Department may have not yet received the permit application. Please include a legible return mailing address. Once the Department has completed its preliminary review of the application and its air quality impacts, the Department's notice will be published in the legal section of a newspaper circulated near the facility location.
Jessie Barber, M.Sc. Agroecology
Agriculture Agent for Lea
get to know the new agent,
and provide feedback to help
amming for Lea County.
be provided in a casual
to meet and discuss things
ACES
Reasons to Call 988
Substance Use Distress
How is 988 different from 911?
A behavioral health crisis needs a behavioral health response.
988 is
Someone to Talk to
Free & Confidential
More Than A Suicide Hotline
07/16/2025



NOTICE

Targa Midstream Services, LLC announces its application submittal to the New Mexico Environment Department for an air quality permit for the **construction** of its **gas plant.** The expected date of application submittal to the Air Quality Bureau is **July 21, 2025.**

The exact location for the facility, known as **Copperhead Gas Plant**, is at latitude **32.212128** North and longitude **-103.624164** West. The approximate location of this facility is 25.9 miles east of Malaga in Lea County.

The proposed modification consists of adding process trains 1 and 2 at the facility.

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:

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$PM_{2.5}$	6.0	22.0
Sulfur Dioxide (SO_2)	2,788.0	99.0
Nitrogen Oxides (NO_x)	4,000.0	166.0
Carbon Monoxide (CO)	7,958.0	228.0
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Total sum of all Hazardous Air Pollutants (HAPs)	23.0	12.0
Toxic Air Pollutant (TAP)	n/a	n/a
Green House Gas Emission as Total CO_2e	n/a	390,000

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The owner/operator of the Facility is: **Targa Midstream Services, LLC, P.O. Box 1909, Eunice, NM 88231.**

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07/16/2025

This email (including any attachments and accompanying emails) may contain proprietary and confidential information. If you are not the intended recipient, please telephone the sender and immediately delete this e-mail (including any attachments and accompanying emails). Please do not replicate, disclose, distribute, forward, or retain this e-mail or any part of this email. Thank you.

General Posting of Notices – Certification

I, Amber Groves, the undersigned, certify that on July 16, 2025 posted a true and correct copy of the attached Public Notice in the following publicly accessible and conspicuous places in, or near, **Jal, Lea** County, state of New Mexico on the following dates:

1. Targa Midstream Services, LLC
   Copperhead Gas Plant
   Date: 7/16/2025

2. Woolworth Community Library
   100 E. Utah
   Jal, NM 88252
   Date: 7/16/2025

3. Jal City Hall
   710 W Wyoming Ave.
   Jal, NM 88252
   Date: 7/16/2025

4. US Post Office
   111 South Fourth Street
   Jal, NM 88252
   Date: 7/16/2025

Signed this 16th day of July, 2025,

Amber Groves 7/16/2025

Signature Date

Amber Groves

Printed Name

ES&H Staff Specialist

Title

From: Aaron Forrister
To: Laura Worthen-Lodes
Subject: Re: PSA Needed As Soon As Possible
Date: Monday, July 14, 2025 1:51:07 PM
Attachments: Outlook-hqn4twhx.png
CREDIT CARD FORM.docx

Hi Laura. Yes we can.

We can run it Wednesday July 16th on KZOR.

The fee is $75 for one time.

I have attached the credit card form. Please fill out the attached form and return to me. Thank you!

Aaron Forrister, CRMC

New Mexico Market Manager
KZOR-KIXN-KPZA-KEJL-KLEA-KBIM FM-KBIM
575-318-7217 mobile
575-397-4969 office
575-393-4310 fax
619 North Turner
Hobbs, NM 88240

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From: Laura Worthen-Lodes <Laura.Worthen-Lodes@Altamira-US.com>
Sent: Monday, July 14, 2025 12:47 PM
To: Aaron Forrister <aaron@noalmark.com>
Cc: Andries, Robert L. <randries@targaresources.com>; Angie Dawson <Angie.Dawson@altamira-us.com>
Subject: RE: PSA Needed As Soon As Possible

Hi Aaron,
My company is doing an air application for our client Targa. It is for their Copperhead Gas Plant. The

application requires a public
service announcement on a local station that services the Lea county area. The attached announcement will only need to run
one time. Is this something that you can help with? We need it run prior to next Monday 7/21.

Thanks,

Laura Worthen Lodes, PE
Chief Engineering Officer | O 405.702.1618 | C 405.919.4129

Submittal of Public Service Announcement – Certification

I, Angie Dawson, the undersigned, certify that on **July 16, 2025,** submitted a public service announcement to **KZOR - KIXN- KPZA -KEJL - KYKK/KOOL FM Radio** that serves the City\Town\Village of **Jal and the surrounding areas, Lea** County, New Mexico, in which the source is or is proposed to be located and that **KZOR - KIXN- KPZA -KEJL - KYKK/KOOL FM Radio** has responded that it will air the announcement.

Signed this 16th day of July, 2025,

Laura Worthen Lodes

Signature

07/16/2025

Date

Laura Worthen Lodes

Printed Name

Consultant

Title {APPLICANT OR RELATIONSHIP TO APPLICANT}

July 15, 2025

Lea County New Mexico
Keith Manes, Lea County Clerk
100 N. Main Avenue, Suite 1C
Lovington, NM 88260
(575) 396-8619

Certified Mail 9589 0710 5270 0336 2363 47

Dear Mr. Manes,
Targa Midstream Services, LLC is providing this revised announcement of its application submittal to the New Mexico Environment Department for an air quality permit for its gas plant. The expected date of application submittal to the Air Quality Bureau is July 21, 2025.

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The proposed modification consists of adding process trains 1 and 2 at the facility.

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Attención
Este es un aviso de la oficina de Calidad del Aire del Departamento del Medio Ambiente de Nuevo México, acerca de las emisiones producidas por un establecimiento en esta área. Si usted desea información en español, por favor comuníquese con esa oficina al teléfono 505-629-3395.

Sincerely,
Altamira-US, LLC



Laura Worthen Lodes
Chief Engineering Officer

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 15, 2025

NGL North Ranch LLC
6120 S Yale Ave., Suite 805
Tulsa, OK 74136

Certified Mail 9589 0710 5270 0336 2363 54

To Whom it May Concern,
Targa Midstream Services, LLC is providing this revised announcement of its application submittal to the New Mexico Environment Department for an air quality permit for its gas plant. The date of application submittal to the Air Quality Bureau is July 21, 2025.

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Sincerely,
Altamira-US, LLC



Laura Worthen Lodes
Chief Engineering Officer

Notice of Non-Discrimination
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July 15, 2025

New Mexico State Land Officer
Oil, Gas and Minerals Division
Allison Marks, Director
310 Old Santa Fe Trail
Santa Fe, NM 87501
(505) 827-5745

Certified Mail 9589 0710 5270 0336 2363 61

Dear Ms. Marks,
Targa Midstream Services, LLC is providing this revised announcement of its application submittal to the New Mexico Environment Department for an air quality permit for its gas plant. The date of application submittal to the Air Quality Bureau is July 15, 2025.

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Sincerely,
Altamira-US, LLC



Laura Worthen Lodes
Chief Engineering Officer

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Targa - Copperhead Gas Plant
Public Notice Letter

Certified Mail Fee
$ $110.44

Extra Services & Fees *(check box, add fee as appropriate)*
- ☐ Return Receipt (hardcopy) $
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

JUL 14 2025
Postmark Here

Postage
$

Total Postage and Fees
$

Sent To
Lea County New Mexico
Keith Manes, Lea County Clerk
Street and Apt. No., or PO Box No.
100 N. Main Avenue, Suite 1C
City, State, ZIP+4®
Lovington, NM 88260

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

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JUL 14 2025
Postmark Here

Postage
$

Total Postage and Fees
$

Sent To
New Mexico State Land Officer
Oil, Gas, and Minerals Division
Allison Marks, Director
Street and Apt. No., or PO Box No.
310 Old Santa Fe Trail
City, State, ZIP+4®
Santa Fe, NM 87501

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

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JUL 14 2025
Postmark Here

Postage
$

Total Postage and Fees
$

Sent To
NGL North Ranch LLC
6120 S Yale Ave., Suite 805
Street and Apt. No., or PO Box No.
Tulsa, OK 74136
City, State, ZIP+4®

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

Section 10

Written Description of the Routine Operations of the Facility

---

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

The Copperhead Gas Processing Plant is a natural gas processing plant located in Lea County near Malaga, NM. The primary function of the plant is to separate natural gas (methane) from heavier (liquid) hydrocarbons, raw sweet field gas so that the gas can meet pipeline specifications. The plant has been designated a primary Standard Industrial Classification (SIC) Code of 1311.

Project Scope and Overview

The Copperhead Gas Plant will be comprised of the existing Copperhead Compressor Station and two proposed gas processing trains that are each designed to process up to 350 MMscf/day of natural gas per train, 700 MMscf/day total.

The existing compressor station includes inlet gas separation, electric motor-driven compressors (Unit IDs: CS-C-1 through CS-C-104), one TEG dehydrator (Unit ID: DEHY1) with reboiler (Unit ID: H-1), liquids handling consisting of tanks (Unit IDs: Tank-1 through Tank-4) and truck loading (Unit IDs: LOAD-1, LOAD-2). Additional miscellaneous ancillary tanks exist at the compressor station (Unit IDs: Tank-7 through Tank-10). With this application an expansion of the existing compressor station is proposed which will include additional electric motor-driven compressors (Unit IDs: CS-C-5 through CS-C-8), a second TEG dehydrator (Unit ID: DEHY2) also equipped with a reboiler (Unit ID: H-2).

The first gas processing train is comprised of inlet separation facilities, an amine treating unit (Unit ID: A-CHP), a glycol dehydration unit (Unit ID: DEHY-CHP), mole sieve dehydration unit, electric motor-driven compressors (Unit IDs: CHP-C-5100 – CHP-C-5140, CHP-C-1160 – CHP-C-1180, and CHP-C-1120 – CHP-C-1130), cryogenic unit, hot oil heaters (Unit IDs: H-1701-CHP through H-1704-CHP), a regen gas heater (Unit ID: H-4701-CHP), condensate stabilization process, produced water tanks (Unit IDs: TK-1907-CHP and TK-1908-CHP) and auxiliary tanks, pressurized loading (Unit ID: L-P), fugitive components (Unit ID: FUG-CHP), vapor combustion unit (Unit ID: VCU), flare (Unit ID: FL-1800-CHP), and MSS-M activities (Unit IDs: SSM-PLANT and SSM-FUG).

The second gas processing train is comprised of inlet separation facilities, an amine treating unit (Unit ID: A-CH2), a glycol dehydration unit (Unit ID: DEHY-CH2), mole sieve dehydration unit, electric motor-driven compressors (Unit IDs: CH2-C-5100 through CH2-C-5140), cryogenic unit, hot oil heaters (Unit IDs: H-1701-CH2 through H-1704-CH2), a regen gas heater (Unit ID: H-4701-CH2), produced water tanks (Unit IDs: TK-1907-CH2 and TK-1908-CH2) and auxiliary tanks, fugitive components (Unit ID: FUG-CH2), flare (Unit ID: FL-1800-CH2), and MSS activities (Unit IDs: SSM-PLANT and SSM-FUG).

Copperhead Compressor Station

Inlet Separation
Inlet gas flows into the compressor station through the slug catcher and then to the inlet separator. Gas is then sent to compression and liquids are sent out via pipeline.

Compression
Gas is then compressed by electric motor driven compressors (Unit IDs: CS-C-1 through CS-C-8). As the compressors are driven by electric motors, there are no emissions expected from the routine operations; the only emissions expected are from routine startup, shutdown, and maintenance activities (Unit ID: SSM-CS).

Dehydration
Treated gas is then routed to triethylene glycol (TEG) dehydrators (Unit IDs: DEHY-1, Reboiler H-1 and DEHY-2 Reboiler H-2) system to remove excess water. Flash gas from this system is recycled back to the inlet and non-condensable BTEX vapors from the still vent are sent to the compressor station flare (Unit ID: FLARE). Dehydrated gas is then sent out to be further processed at a gas plant and liquids from the process are routed either offsite via pipeline or to the compressor station atmospheric storage tanks (Unit IDs: Tank-1 through Tank-4).

Liquids Handling
The collected condensate and produced water are stored in four atmospheric storage tanks (Units IDs: Tank-1 through Tank-4). The condensate tanks (Unit IDs: Tank-1 and Tank-2) vent to the flare (Unit ID: FLARE). The produced water tanks (Unit IDs: Tank-3 and Tank-4) are atmospheric and are not controlled. The storage tanks contents are removed from the site via tanker trucks (Unit IDs: Load-1 and Load-2).

Ancillary Tanks
Additionally, the facility stores various products used to maintain the equipment for normal operations. Additional sources of emissions are fugitives from piping components from the compressor station (Unit ID: FUG) and SSM activities (Unit ID: SSM-CS).

Copperhead Gas Processing Train 1

Inlet Separation
Inlet gas flows into the gas plant through the slug catchers and inlet separator which are designed to allow for liquids to drop out of the inlet gas. Gas coming into the gas plant is already at high pressure and, therefore, does not need to be compressed. Next the gas is routed to the treating system, see the "Gas Treating" section of process description below. The liquids from the inlet separator are routed to the produced water storage tanks (Unit IDs: TK-1907-CHP and TK-1908-CHP). Both produced water storage tanks (TK-1907-CHP and TK-1908-CHP) are routed to the vapor combustion unit (Unit ID: VCU). The produced water will be periodically loaded (Unit ID: L-P) into tanker trucks in a pressurized system.

Condensate Stabilization Process
The raw condensate in the MP Flash Tanks is routed to the Acid Gas Stripper (to boil off ethane, CO2 and H2S from the raw condensate. Hot oil from the plant HMO system (Unit IDs: H-1701-CHP through H-1704-CHP) is used to provide the heat. These vapors are combined with the flash vapors from the MP Flash Tank and recompressed by the MP Flash Compressors (Unit IDs: CHP-C-1160 through CHP-C-1180). Water is separated in the MP Flash tank and routed to the plant Closed Drain Tank. Partially stabilized condensate is staged in the LP Flash Tank prior to entering the Stabilizer . Inside the stabilizer the condensate is heated to further boil off light hydrocarbons making a 9 RVP liquid bottoms product. Hot oil from the plant HMO system (Unit IDs: H-1701-CHP through H-1704-CHP) is used to provide the heat. The stabilized condensate liquids stored in these pressurized bullet tanks exit the facility via pressurized truck loading. The only source of emissions from the pressurized storage and loading system are fugitive components (Unit ID: FUG-CHP). The Closed Drain Tank serves as a closed system collection point within the facility. Produced water in the Closed Drain Tank is routed to the Produced Water Tanks (Unit IDs: TK-1907-CHP and TK-1908-CHP) which are routed to the vapor combustion unit (Unit ID: VCU) for control. Flash Vapors in the Closed Drain Tank are routed to the LP Flash Compressors (Unit IDs: CHP-C-1120 and CHP-C-1130) and recycled back to the front end of the plant by way of the MP Flash Compressors (Unit IDs: CHP-C-1160 through CHP-C-1180).

Gas Treating
After inlet separation and filtration, the inlet gas flows into the amine contactor, where the gas is contacted with an aqueous solution of amine to remove CO_2 and hydrogen sulfide (H_2S). CO_2 and H_2S exit from the bottom of the contactor with the rich amine which is heated and regenerated using the closed hot oil system in the amine regenerator.

Hot oil is circulated and supplied by the hot oil system (Unit IDs: H-1701-CHP through H-1704-CHP). Flash tank vapors are routed to the Closed Drain tank. The CO_2 and H_2S rich vent gas released from the regeneration process is routed to the Acid Gas Compressors (Unit IDs: CHP-C- 6100 through CHP-C-6120) for disposal into the acid gas injection (AGI) well (Unit ID: AGI). When the AGI compressors (Unit IDs: CHP-C-6100 through CHP-C-6120) are down for maintenance, the CO_2 and H_2S rich vent gas may be routed to the flare (Unit ID: FL-1800-CHP). Treated gas (less CO_2 and H_2S) exits the amine contactor and is routed to the glycol dehydrator.

Gas Dehydration
Gas from the amine contactor then goes to the glycol contactor where water removal is accomplished by absorption with triethylene glycol (TEG). The rich TEG is then routed through a flash tank and to the TEG regenerator. The TEG is then regenerated using a hot oil-driven regeneration system. The hot oil is supplied from the dedicated hot oil system (Unit IDs: H-1701-CHP through H-1704-CHP). Flash vapors from the flash tank are routed to the Closed Drain tank. Vapors from the TEG dehydration unit still vent are routed to the Closed Drain tank by Overhead Compressors that are part of the process and do not have any associated emissions.

Gas exits the glycol dehydrator and flows into the mole sieve dehydrator beds. Each dehydrator bed contains molecular sieve dehydration beads that adsorb trace amounts of water from the gas stream. Two vessels are used to dehydrate inlet gas while the third vessel is being regenerated. Dehydrated high pressure gas is used for regeneration. The regen gas flows to the regen heater (Unit ID: H-4701-CHP). The hot gas flows from the heater to the dehydrator vessel in regeneration and water is removed from the molecular sieve by evaporation. The hot gas and vaporized water are cooled and the water is condensed and separated. The condensed water is routed to the plant produced water tanks (Unit IDs: TK-1907-CHP and TK-1908-CHP) by way of the Closed Drain Tank. The cooled regen gas is recompressed by the regen gas compressor and recycled to the inlet of the Amine Contactor.

Cryogenic Unit
After the mole sieve dehydration system, dry inlet gas goes through the dust filters and enters the cryogenic unit. In the cryogenic unit the inlet gas is cooled by cross exchanging the inlet gas with cold residue gas, cold natural gas liquids (NGL)s, and propane refrigeration. As the inlet gas cools, NGLs are condensed. The NGLs are separated from the cold inlet gas in the warm & cold separators. The NGLs are discharged from the separators to the demethanizer. The cold inlet gas exiting the top of the cold separator flow through the expander & reflux exchanger. The expander reduces the pressure of the inlet gas and in doing so extracts work from the gas and results in condensation of additional NGLs.

The two-phase mixture exiting the expander is fed to the upper section of the demethanizer, which strips methane from the NGLs. The NGLs exit the bottom of the demethanizer with a low residual concentration of methane. The remainder of the inlet feed gas (residue gas) exits the top of the demethanizer. The cold residue gas is cross exchanged with the inlet gas to recover the refrigeration. The warm residue gas exiting the cryogenic unit is compressed by electric motor driven compressors (Unit IDs: CHP-C-5100 through GCP-C-5140) to pipeline pressure. Prior to discharge to the pipeline, the residue gas is filtered and metered. The NGL product from the cryogenic unit is pumped through a sales meter and then off-site via pipeline.

Ancillary Tanks
The site will store various products used to maintain the equipment and normal operations listed in the table 2-A in section 2 of this application.

With the exception of the produced water tanks (EPNs: TK-1907-CHP and TK-1908-CHP), emissions from the ancillary tanks are assumed to be negligible and are exempt per 20.2.72.202.b(2) as documented on the attached NMED Table 2-B: Insignificant Activities or Exempted Equipment, included in section 2 of this application. Additional sources of emissions are fugitives from piping components from the first gas processing train (Unit ID: FUG-CHP) and SSM activities.

Flare for Startup, Shutdown, and Maintenance (SSM) and Malfunction (M) Activities
The gas plant flare (Unit ID: FL-1800-CHP) is designed for smokeless operation and located at the facility for amine gas stream control as well as routine SSM and Malfunction activities. During routine SSM activities, plant turnarounds, and Malfunction activities residue (process) gases may also be routed to the flare (Unit IDs: SSM-Plant and FL-1800-CHP).

Copperhead Gas Processing Train 2

Inlet Separation
Inlet separation occurs using the inlet separation equipment at processing Train 1.

Condensate Stabilization Process
Stabilization occurs using the stabilization equipment at processing Train 1.

Gas Treating
After inlet separation and filtration, the inlet gas flows into the amine contactor, where the gas is contacted with an aqueous solution of amine to remove CO_2 and hydrogen sulfide (H_2S). CO2 and H2S exit from the bottom of the contactor with the rich amine which is heated and regenerated using the closed hot oil system in the amine regenerator. Hot oil is circulated and supplied by the hot oil system (Unit IDs: H-1701-CH2 through H-1704-CH2). Flash tank vapors are routed to the Closed Drain tank. The CO2 and H2S rich vent gas released from the regeneration process is routed to the Acid Gas Compressors (Unit IDs: CHP-C-

6100 through CHP-C-6120) for disposal into the acid gas injection (AGI) well (Unit ID: AGI). When the AGI compressors (Unit IDs: CHP-C-6100 through CHP-C-6120) are down for maintenance, the CO2 and H2S rich vent gas may be routed to the flare (Unit ID: FL-1800-CHP). Treated gas (less CO2 and H2S) exits the amine contactor and is routed to the glycol dehydrator.

Gas Dehydration

Gas from the amine contactor then goes to the glycol contactor where water removal is accomplished by absorption with TEG. The rich TEG is then routed through a flash tank and to the TEG regenerator. The TEG is then regenerated using a hot oil-driven regeneration system. The hot oil is supplied from the dedicated hot oil system (Unit IDs: H-1701-CH2 through H-1704-CH2). Flash vapors from the flash tank are routed to the Closed Drain tank at the front of the plant. Vapors from the TEG dehydration unit still vent are routed to the Closed Drain tank by vapor recovery units that are part of the process and do not have any emissions associated with it.

Gas exits the glycol dehydrator and flows into the mole sieve dehydrator beds. Each dehydrator bed contains molecular sieve dehydration beads that adsorb trace amounts of water from the gas stream. Two vessels are used to dehydrate inlet gas while the third vessel is being regenerated. Dehydrated high pressure gas is used for regeneration. The regen gas flows to the regen heater (Unit ID: H-4701-CH2). The hot gas flows from the heater to the dehydrator vessel in regeneration and water is removed from the molecular sieve by evaporation. The hot gas and vaporized water are cooled and the water is condensed and separated. The condensed water is routed to the plant produced water tanks (Unit IDs: TK-1907-CH2 and TK-1908-CH2) by way of the Closed Drain Tank. The cooled regen gas is recompressed by the regen gas compressor and recycled to the inlet of the Amine Contactor.

Cryogenic Unit

After the mole sieve dehydration system, dry inlet gas goes through the dust filters and enters the cryogenic unit. In the cryogenic unit the inlet gas is cooled by cross exchanging the inlet gas with cold residue gas, cold natural gas liquids (NGL)s, and propane refrigeration. As the inlet gas cools, NGLs are condensed. The NGLs are separated from the cold inlet gas in the warm & cold separators. The NGLs are discharged from the separators to the demethanizer. The cold inlet gas exiting the top of the cold separator flow through the expander & reflux exchanger. The expander reduces the pressure of the inlet gas and in doing so extracts work from the gas and results in condensation of additional NGLs.

The two-phase mixture exiting the expander is fed to the upper section of the demethanizer, which strips methane from the NGLs. The NGLs exit the bottom of the demethanizer with a low residual concentration of methane. The remainder of the inlet feed gas (residue gas) exits the top of the demethanizer. The cold residue gas is cross exchanged with the inlet gas to recover the refrigeration. The warm residue gas exiting the cryogenic unit is compressed by electric motor driven compressors to pipeline pressure. Prior to discharge to the pipeline, the residue gas is filtered and metered. The NGL product from the cryogenic unit is pumped through a sales meter and then off-site via pipeline.

Ancillary Tanks

The site will store various products used to maintain the equipment and normal operations listed in the table below.

With the exception of the produced water tanks (Unit IDs: TK-1907-CH2 and TK-1908-CH2), emissions from the ancillary tanks are assumed to be negligible and are exempt per 20.2.72.202.b(2) as documented on the attached NMED Table 2-B: Insignificant Activities or Exempted Equipment, included in section 2.

Additional sources of emissions are fugitives from piping components from the second gas processing train (Unit ID: FUG-CH2) and SSM activities.

Flare for SSM Activities

The gas plant flare (Unit ID: FL-1800-CH2) is designed for smokeless operation and located at the facility for amine gas stream control as well as routine SSM activities. During routine SSM activities and plant turnarounds, and process gases may also be routed to the flare.

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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)**:**
The proposed Copperhead Gas Plant and adjacent Copperhead Compressor Station are considered in this application and treated as a single source.

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.

X Yes **☐ No**

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

X Yes **☐ No**

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

X Yes **☐ No**

C. Make a determination:

X 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:

- **X** **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. Project increases are less than 250 tpy. The "project" emissions listed below do 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. Debottlenecked emissions are not accounted for since the source is an existing minor NSR site. 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: 143.46 TPY**
b. **CO: 199.33 TPY**
c. **VOC: 133.14 TPY**
d. **SOx: 89.69 TPY**
e. **PM: 17.84 TPY**
f. **PM10: 17.71 TPY**
g. **PM2.5: 17.67 TPY**
h. **Sulfur compounds (listed in Table 2): 2.94 TPY**
i. **GHG: 358,868 TPY**

C. Netting N/A

D. BACT N/A

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

Section 13

Determination of State & Federal Air Quality Regulations

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

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

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

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

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

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

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

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

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

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	The site does not have gas burning equipment larger than 1,000,000 MM Btu/year.
20.2.34 NMAC	Oil Burning Equipment: NO_2	No	N/A	The site does not have oil burning equipment larger than 1,000,000 MM Btu/year.
20.2.35 NMAC	Natural Gas Processing Plant – Sulfur	Yes	Facility	This regulation could apply to existing (prior to July 1, 1974) or new (on or after July 1, 1974) natural gas processing plants that use a Sulfur Recovery Unit to reduce sulfur emissions. **The Facility will comply with all applicable requirements of 20.2.35 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.)
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	N/A	**N/A**	This regulation could apply to storage tanks at petroleum production facilities, processing facilities, tanks batteries, or hydrocarbon storage facilities. The facility does not have tank sizes that meet the applicability criteria.
20.2.39 NMAC	Sulfur Recovery Plant - Sulfur	N/A	**N/A**	This regulation could apply to sulfur recovery plants that are not part of petroleum or natural gas processing facilities. This facility does not have a sulfur recovery plant.
20.2.50 NMAC	Oil and Gas Sector – Ozone Precursor Pollutants	Yes	**Sec 114** CHP-C-5100, to 5140, CHP-C-1160, to 1180, CHP-C-1120, CHP-C-1130, CHP-C-6100, CHP-C-6110, CHP-C-6120, CH2-C-5100 To CH2-C-5140- CH2-C-6100, CH2-C-6110, CH2-C-6120, CS-C-1, CS-C-104 CS-C-2, CS-C-3, CS-C-5 to CS-C-8 **SEC 115** FLARE **SEC 116** FUG FUG-CHP FUG-CH2 **SEC 118** DEHY-1 DEHY-2 **SEC 119** H-1701-CHP	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: 114-This facility has 33 reciprocating compressors listed on Table 2-A. Thus, this facility is subject to this regulation. The owner will comply with this subpart as state in 20.2.50.114. B(4). 115-The control devices and closed vent systems at this facility are used to comply with the requirements of this rule; therefore, they are subject to the requirements of this regulation. 116-This facility will have equipment leaks and fugitive emissions. Thus, it will comply with this regulation. 117-This facility is a natural gas plant. Thus it is subject to this regulation. 118-There are two glycol dehydrators (DEHY-1, DEHY-2) associated with the compressor station that are subject to this regulation. DEHY-CHP and DEHY-CH2 associated with processing trains 1 and 2 are part of a closed loop system and not subject. 119- H-1701-CHP, H-1702-CHP, H-1703-CHP, H-1704-CHP, H-4701-CHP, H-1701-CH2, H-1702-CH2, H-1703-CH2, H-1704-CH2, H-4701-CH2, have a maximum capacity greater than 20 MMBtu/hr. Thus, this facility is subject to this regulation. 120-This facility will truck out more than 13 times a year and is therefore subject to this regulation. 121-This facility has pig launching and receiving. Therefore, this facility is subject to this regulation. 122-This facility all controllers and pumps will operate on air and are therefore not subject to this regulation. 123-The new produced water tanks (Tank-1 to Tank-4, TK-1907-CHP, TK-1908-CHP, TK-1907-CH2 and TK-1908-CH2) have a PTE less than 2 tpy maximum allowable VOC emissions. Thus, are not subject to this subpart. 124-The facility is a natural gas plant. Thus, it is not subject to this regulation. 126-This facility does not contain a produced water management unit.

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.)
			H-1702-CHP H-1703-CHP H-1704-CHP H-4701-CHP H-1701-CH2 H-1702-CH2 H-1703-CH2 H-1704-CH2 H-4701-CH2	127-This facility is a natural gas plant. Thus is not subject to this regulation.
20.2.61.109 NMAC	Smoke & Visible Emissions	Yes	H-1 H-2 Flare H-1701-CHP H-1702-CHP H-1703-CHP H-1704-CHP H-4701-CHP FL-1800-CHP H-1701-CH2 H-1702-CH2 H-1703-CH2 H-1704-CH2 H-4701-CH2 FL-1800-CH2 VCU	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). The heaters, reboilers and flares at the facility are subject to this regulation.
20.2.70 NMAC	Operating Permits	Yes	Facility	The facility's potential to emit (PTE) is greater than 100 tpy of any regulated air pollutant and will apply for a Title V operating permit within 1 yr of operation.
20.2.71 NMAC	Operating Permit Fees	Yes	Facility	The facility is subject to the operating permit fee requirements.
20.2.72 NMAC	Construction Permits	No	Facility	This regulation establishes the requirements for obtaining a construction permit. The facility is a stationary sources that has the potential to emit greater than 10 pounds per hour or 25 tons per year of a regulated air contaminant for which there is a National or New Mexico Ambient Air Quality Standard. This application is a construction permit application to meet this requirement.

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.)
20.2.73 NMAC	NOI & Emissions Inventory Requirements	Yes	Facility	This regulation establishes emissions inventory requirements. The facility meets the applicability requirements of 20.2.73.300 NMAC. The facility will meet all applicable requirements under 20.2.73.300.B.1 NMAC.
20.2.74 NMAC	Permits – Prevention of Significant Deterioration (PSD)	No	Facility	This regulation is applicable to PSD major source. The emissions from the facility are currently below the 250 TPY PSD threshold for all criteria air pollutants will remain below said PSD thresholds after the completion of the proposed project. Additionally, the heaters which will support the facility are believed to be heaters rather than "steam generating boilers" 20.2.74.200 NMAC nor 40 CFR Part 51.166. However, emissions from all heaters combined are less than 100 TPY for each of the criteria pollutants. Therefore, the facility is not subject to the lower 100 TPY PSD threshold based on the equipment types.
20.2.75 NMAC	Construction Permit Fees	No	Facility	This regulation establishes a schedule of operating permit emission fees. The facility will be subject to 20.2.72 NMAC and is, therefore, subject to requirements of this regulation.
20.2.77 NMAC	New Source Performance	Yes	FUG-CHP, FUG-CH2, CHP-C-5100, CHP-C-5110, CHP-C-5120, CHP-C-5130, CHP-C-5140, CHP-C-1160, CHP-C-1170, CHP-C-1180, CHP-C-1120, CHP-C-1130, CHP-C-6100, CHP-C-6110, CHP-C-6120, CH2-C-5100, CH2-C-5110, CH2-C-5130, CH2-C-5140-CH2-C-6100, CH2-C-6110, CH2-C-6120, CS-C-1,	This is a stationary source which is subject to the requirements of 40 CFR Part 60. The fugitives FUG-CHP & FUG-CH2) associated with Trains 1 and 2 will be subject to NSPS OOOOb monitoring for gas plants. The reciprocating compressors CHP-C-5100, CHP-C-5110, CHP-C-5120, CHP-C-5130, CHP-C-5140, CHP-C-1160, CHP-C-1170, CHP-C-1180, CHP-C-1120, CHP-C-1130, CHP-C-6100, CHP-C-6110, CHP-C-6120, CH2-C-5100 CH2-C-5110, CH2-C-5130, CH2-C-5140-CH2-C-6100, CH2-C-6110, CH2-C-6120, CS-C-1, CS-C-104, CS-C-2, CS-C-3, CS-C-5 to CS-C-8 will be potentially be subject to the requirements of NSPS OOOOa o NSPS OOOOb depending on the date of manufacture.

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.)
			CS-C-104, CS-C-2, CS-C-3, CS-C-5 to CS-C-8	
20.2.78 NMAC	Emission Standards for HAPS	No	N/A	No units are subject to the requirements of 40 CFR Part 61.
20.2.79 NMAC	Permits – Nonattainment Areas	No	Facility	Site is not located in a nonattainment county
20.2.80 NMAC	Stack Heights	No	N/A	Not cited in NSR permit. No stacks exceed GEP Height
20.2.82 NMAC	MACT Standards for source categories of HAPS	Yes	Units Subject to 40 CFR 63	The site has equipment that is subject to MACT Subpart HH and ZZZZ.

Table for Applicable Federal Regulations

Federal Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
40 CFR 50	NAAQS	No	N/A	The modeling and conditions developed from the modeling are the applicable requirements to demonstration compliance with the NAAQs..
NSPS 40 CFR 60, Subpart A	General Provisions	Yes	Units subject to 40 CFR 60	The site has units subject to an NSPS shown below
NSPS 40 CFR60.40a, Subpart Da	Subpart Da, Performance Standards for **Electric Utility Steam Generating Units**	No	N/A	No units are subject to NSPS Subpart Da.

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	No units are subject to NSPS Subpart Db.
40 CFR 60.40c, Subpart Dc	Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units	Yes	H-1701-CHP H-1702-CHP H-1703-CHP H-1704-CHP H-1701-CH2 H-1702-CH2 H-1703-CH2 H-1704-CH2	Applicability: The facility has steam generating units for which construction, modification or reconstruction is commenced after June 9, 1989 and that have a maximum design heat input capacity of 29 MW (100 MMBtu/hr) or less, but greater than or equal to 2.9 MW (10 MMBtu/hr).
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	All tanks have a storage capacity greater than 151,416 liters (40,000 gallons) that are used to store petroleum liquids for which construction is commenced after May 18, 1978.
NSPS 40 CFR 60, Subpart Kb	Standards of Performance for **Volatile Organic Liquid Storage Vessels** (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced **After** July 23, 1984	Yes	TK-1907-CHP TK-1908-CHP TK-1907-CH2 TK-1908-CH2	This facility has storage vessels with a capacity greater than or equal to 75 cubic meters (m^3) that is used to store volatile organic liquids (VOL) for which construction, reconstruction, or modification is commenced after July 23, 1984.
NSPS 40 CFR 60.330 Subpart GG	**Stationary Gas Turbines**	No	N/A	No stationary gas turbines are operated at the site.

Federal Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
NSPS 40 CFR 60, Subpart KKK	Leaks of VOC from **Onshore Gas Plants**	No	N/A	This facility commenced construction after August 23, 2011. Thus, the facility is not subject to this subpart.
NSPS 40 CFR Part 60 Subpart LLL	Standards of Performance for **Onshore Natural Gas Processing**: SO_2 Emissions	No	N/A	The facility is a natural gas processing plant; however, there is no sulfur recovery plant. Thus, this location does not meet the applicability criteria of 40 CFR 60.640.
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	Yes	Compressors	Targa will make a final determination of NSPS OOOO/a/b applicability upon completion of installation of the equipment. There are 29 electric-driven compressors associated with the compressor stations, Plant 1 and Plant 2 and which may be manufactured after December 6, 2022.
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	Yes	Compressors, Storage Tanks, Fugitives	Targa will make a final determination of NSPS OOOO/a/b applicability upon completion of installation of the equipment. There are 29 electric-driven compressors associated with the compressor stations, Plant 1 and Plant 2 and were manufactured after September 18, 2015. The ones associated with the compressor station were constructed prior to December 6, 2022 are subject to 60.5385a, 60.5410a, 60.5415a, and 60.5420a. The ones associated with the plant will be evaluated upon installation for applicability with OOOOa and OOOOb T-1, T-2, T-3, and T-4 are storage vessels constructed after September 18, 2015 with federally enforceable limitations that limit emissions to less than 6 tpy of VOCs. As such, T1 to T6 are not subject to 60.5395a, 60.5410a, 60.5417a, 60.5420a. The amine units are sweetening units as defined in this subpart that were constructed after September 18, 2015. Per 60.5365a(g) (3) the amine units are required to comply with 60.5423a(c) but not required to comply with 60.5405a through 60.5407 and 60.5410a(g) and 60.5415a(g). The facility is defined as an onshore natural gas processing plant. Therefore, fugitives are covered by 60.5400a, 60.5401a, 60.5402a, 60.5421a, and 60.5422a. Pneumatic devices and pumps will utilize instrument air.
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	Compressors, Storage Tanks, Fugitives	Targa will make a final determination of NSPS OOOO/a/b applicability upon completion of installation of the equipment. There are 29 electric-driven compressors associated with the compressor stations, Plant 1 and Plant 2 and which may be manufactured after December 6, 2022. The proposed compressors will be evaluated upon installation for applicability with OOOO, OOOOa and OOOOb The amine units are sweetening units as defined in this subpart that will be constructed after December 6, 2022. Per 60.5365b(g) (3) the amine units are required to comply with 60.5423b(c) but not required to comply with 60.5405b through 60.5407 and 60.5410b(g) and 60.5415b(g). The facility is defined as an onshore natural gas processing plant. Therefore, fugitives are covered by 60.5397b, 60.5398b. Pneumatic devices and pumps will utilize instrument air.

Federal Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
NSPS 40 CFR 60 Subpart IIII	Standards of performance for Stationary Compression Ignition Internal Combustion Engines	No	N/A	No Compression ignited RICE are operated at the site.
NSPS 40 CFR Part 60 Subpart JJJJ	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines	No	N/A	No spark ignited RICE are operated at the site.
NSPS 40 CFR 60 Subpart TTTT	Standards of Performance for Greenhouse Gas Emissions for Electric Generating Units	No	N/A	No affected units at the Facility
NSPS 40 CFR 60 Subpart UUUU	Emissions Guidelines for Greenhouse Gas Emissions and Compliance Times for Electric Utility Generating Units	No	N/A	No affected units at the Facility
NSPS 40 CFR 60, Subparts WWW, XXX, Cc, and Cf	Standards of performance for Municipal Solid Waste (MSW) Landfills	No	N/A	No affected units at the Facility
NESHAP 40 CFR 61 Subpart A	General Provisions	No	Units Subject to 40 CFR 61	No 40 CFR 61 sources at the site.
NESHAP 40 CFR 61 Subpart E	National Emission Standards for **Mercury**	No	N/A	No units at the facility. .
NESHAP 40 CFR 61 Subpart V	National Emission Standards for **Equipment Leaks** (Fugitive Emission Sources)	**No**	**N/A**	No units at the site operate in more than 10 wt% VHAP service.
MACT 40 CFR 63, Subpart A	General Provisions	Yes	Units Subject to 40 CFR 63	This facility is an area source for HAPs. Area source provisions of 40 CFR Part 63 subpart HH apply to the glycol dehydrators at the site
MACT 40 CFR 63.760 Subpart HH	**Oil and Natural Gas Production Facilities**	Yes	DEHY1, DEHY2, DEHY-CHP, DEHY-CH2	This facility is a HAP Area Source and is subject to the requirements of 40 CFR 63 Subpart HH. Dehydrators DEHY1, DEHY2, DEHY-CHP, DEHY-CH2 have actual emissions less than 1 tpy (0.9 Megagrams per year) and are therefore exempt from control requirements per 40 CFR 63.764(e)(1)(ii). Records of the exempt status will be maintained as required in 40 CFR 63.774(d)(1).

Federal Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
MACT 40 CFR 63 Subpart HHH		No	N/A	This Facility is not a natural gas transmission 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	This regulation establishes national emission standards for hazardous air pollutants for major industrial, commercial, and institutional boilers and process heaters at Major sources of HAPs. The facility is an area source of HAPs; therefore, this regulation does not apply
MACT 40 CFR 63 Subpart UUUUU	National Emission Standards for Hazardous Air Pollutants Coal & Oil Fire Electric Utility Steam Generating Unit	No	N/A	There are no affected units at the Facility
MACT 40 CFR 63 Subpart ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (**RICE MACT**)	No	N/A	There are no stationary reciprocating internal combustion engines.
40 CFR 64	**Compliance Assurance Monitoring**	No	N/A	**CAM will be addressed as part of the initial Title V permit application**
40 CFR 68	**Chemical Accident Prevention**	Yes	Facility	An owner or operator of a stationary source that has more than a threshold quantity of a regulated substance in a process, as determined under §68.115, See 40 CFR 68
Title IV – Acid Rain 40 CFR 72	**Acid Rain**	No	N/A	This regulation establishes a regulation for protection of the stratospheric ozone. The regulation is not applicable because the facility does not “service”, “maintain”, or “repair” class I or class II appliances nor “disposes” of the appliances [40 CFR Part 82.1(a)].

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.

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.

The SSM from the flare is assumed to occur outside of steady state operations.

Section 16

Air Dispersion Modeling

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

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

Check each box that applies:

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

Universal Application 4

Air Dispersion Modeling Report

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

16-A: Identification

1	Name of facility:	Copperhead Gas Plant
2	Name of company:	Targa Midstream Services, LLC
3	Current Permit number:	7712
4	Name of applicant's modeler:	Laura Worthen Lodes, PE
5	Phone number of modeler:	405-702-1618
6	E-mail of modeler:	Laura.Worthen-Lodes@Altamira-US.com

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.		
	The addition of 2 gas processing trains to the facility.		
4	What geodetic datum was used in the modeling?	NAD83	
5	How long will the facility be at this location?	Permanent	
6	Is the facility a major source with respect to Prevention of Significant Deterioration (PSD)?	Yes☐	No☒

7	Identify the Air Quality Control Region (AQCR) in which the facility is located	155	
8	List the PSD baseline dates for this region (minor or major, as appropriate).		
	NO2	3/16/1988	
	SO2	7/28/1978	
	PM10	2/20/1979	
	PM2.5	11/13/2013	
9	Provide the name and distance to Class I areas within 50 km of the facility (300 km for PSD permits).		
	Carlsbad Caverns National Park is located 86.1 km from the Facility, the Class I Area Analysis is not applicable.		
10	Is the facility located in a non-attainment area? If so describe below	Yes☐	No☒
11	Describe any special modeling requirements, such as streamline permit requirements.		
	N/A		

16-C: Modeling History of Facility

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

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

16-D: Modeling performed for this application

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

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

	NO_2	☐	☒	☐	☐	☐
	SO_2	☐	☒	☐	☐	☐
	H_2S	☐	☒	☐	☐	☐
	PM2.5	☐	☒	☐	☐	☐
	PM10	☐	☒	☐	☐	☐
	Lead	☐	☐	☐	☐	☒
	Ozone	☒	☐	☐	☐	☐
	State air toxic(s) (20.2.72.402 NMAC)	☐	☐	☐	☐	☒

16-E: New Mexico toxic air pollutants modeling

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

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

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

16-F: Modeling options

1	Was the latest version of AERMOD used with regulatory default options? If not explain below.	Yes☒	No☐
	BEEST AERMOD with US EPA executable 24142 which provides more detailed background concentration tools and added flexibility. The model was run in regulatory default mode for all pollutants other than NO_x. The NO_x model was run utilizing the Tier 2, Ambient Ratio Method 2 (ARM2): 0.5 ambient ratio of NO_2 to NO_x.		

16-G: Surrounding source modeling

1	Date of surrounding source retrieval	Background monitoring data was utilized for NOX. Modeling retrieval dated 7/13/2025 was used for PM2.5, PM10, SO2 and H2S

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
38309EQPT2 to 38309EQPT2	Copperhead sources, duplicative
32557EQPT31	Flare SSM
32557E31	Flare SSM
39298E13	Flare SSM
39298E14	Flare SSM

	39472E15	Flare SSM
	38778E21	Flare SSM
	39052EQPT40	Flare SSM
	38493EQPT23	Flare SSM
	38493E23	Flare SSM
	40286E25	Flare SSM
	40080EQPT20	Flare SSM
	40080EQPT3	Flare SSM
	40080E3	Flare SSM
	40081E3	Flare SSM
	40081E20	Flare SSM
	39360E26	Flare SSM
	39360E27	Flare SSM
	29885C5	Flare SSM
	29885E49	Flare SSM
	29885E50	Flare SSM
	29885E51	Flare SSM
	29885E56	Flare SSM
	29885E88	Flare SSM
	29885E89	Flare SSM
	9885E116	Flare SSM
	29885R4	Flare SSM
	29885R7	Flare SSM
	39005E17	Flare SSM
	12664E33	Flare SSM
	39951E14	Flare SSM
	38177E2	Flare SSM
	33215E19	Flare SSM
	12667E33	Flare SSM
	39389E17	Flare SSM
	35483E27	Flare SSM
	34583E55	Flare SSM
	34583E56	Flare SSM
	12703E22	Flare SSM
	7733E23	Flare SSM
	38864E22	Flare SSM
	35528E28	Flare SSM
	40752E8	Flare SSM
	40752E20	Flare SSM
	39080E19	Flare SSM
	37873E22	Flare SSM
	38910E23	Flare SSM
	35603E58	Flare SSM
	6334E17	Flare SSM

	5051E44	Flare SSM
	5051E45	Flare SSM
	40183E18	Flare SSM
	39295E52	Flare SSM
	36055E19	Flare SSM
	39516E21	Flare SSM
	38567E30	Flare SSM
	30337E17	Flare SSM
	35195E20	Flare SSM
	12737E22	Flare SSM
	38050E71	Flare SSM
	38050E73	Flare SSM
	30324EQPT13	Flare SSM
	30324E13	Flare SSM
	11639E30	Flare SSM
	33269E14	Flare SSM
	38124EQPT21	Flare SSM
	38124E21	Flare SSM
	12774E21	Flare SSM
	38200EQPT13	Flare SSM
	35314EQPT19	Flare SSM
	35314E19	Flare SSM
	11551E21	Flare SSM
	40158E22	Flare SSM
	5694E11	Flare SSM
	39517E18	Flare SSM
	39553E13	Flare SSM
	12634E9	Flare SSM
	39998E15	Flare SSM
	35592E11	Flare SSM
	35592R3	Flare SSM
	8695E12	Flare SSM
	38720E35	Flare SSM
	6178E10	Flare SSM
	40606E19	Flare SSM
	32238E11	Flare SSM
	32238E12	Flare SSM
	39871E36	Flare SSM
	37839E25	Flare SSM
	10843RPNT4	Flare SSM
	40380EQPT13	Stack parameters were corrected to match the permit application, point source and not a volume source
	39225@1	Intermittent source that does not operate daily.

16-H: Building and structure downwash

1	How many buildings are present at the facility?	There is one building present at the facility.		
2	How many above ground storage tanks are present at the facility?	There are two (2) produced water storage tanks, one (1) condensate storage tank, one (1) new H_2S scavenger tank, and one (1) Spent H_2S scavenger tank present at the facility.		
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 line which defines the restricted area.					
2	Receptors must be placed along publicly accessible roads in the restricted area. Are there public roads passing through the restricted area?				Yes☐	No☒
3	Are restricted area boundary coordinates included in the modeling files?				Yes☒	No☐
4	Describe the receptor grids and their spacing. The table below may be used, adding rows as needed.					
	Grid Type	Shape	Spacing	Start distance from restricted area or center of facility	End distance from restricted area or center of facility	Comments
	Very Fine	Rectangle	100 m	Fenceline	1,000 m	
	Fine	Rectangle	250 m	1,000 m	2,500 m	
	Medium	Rectangle	500 m	2,500 m	5,000 m	
	Coarse	Rectangle	1,000 m	5,000 m	10,000 m	
5	Describe receptor spacing along the fence line.					
	50 m spacing along the fence line					
6	Describe the PSD Class I area receptors.					
	N/A					

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).		
	Either the natural gas generators or the diesel generators will be installed. A source group was created to show maxi for either scenario. The maximum NO_x lb/hr rate was utilized for all sources.		
2	Which scenario produces the highest concentrations? Why? Natural gas fired generators seem to produced the highest impacts for most averaging periods, pollutants.		
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☒
	A worst case hourly rate was used for the SSM from the flares, annual modeling was based on the expect annual emissions.		

16-K: NO_2 Modeling

1	Which types of NO_2 modeling were used? Check all that apply.	
	☒	ARM2

	☐	100% NO_X to NO_2 conversion
	☐	PVMRM
	☐	OLM
	☐	Other:
2	Describe the NO_2 modeling.	
	Modeling was performed utilizing Tier 2, ARM2 within AERMOD.	
3	Were default NO_2/NO_X ratios (0.5 minimum, 0.9 maximum or equilibrium) used? If not describe and justify the ratios used below.	Yes☒ No☐
	N/A	
4	Describe the design value used for each averaging period modeled.	
	1-hour: High eighth high Annual One Year Annual Average:	

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)	$MERP_{VOC}$	$[O_3]_{8\text{-hour}}$

16-M: Particulate Matter Modeling

	Select the pollutants for which plume depletion modeling was used.

1	☐	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		$[PM2.5]_{24\text{-hour}}$
	$MERP_{annual}$	26780	14978		0.078 μg/m^3
	$MERP_{24\text{-hour}}$	7331	1981		$[PM2.5]_{annual}$
	Emission rate (ton/yr)	143.46	89.76		0.0023 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	
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☐
	Annual emissions standards are modeled using the annual TPY from Tables 2-E and Table 2-F. Flares FL-1800-CHP and FL-1800-CH2 are have an annual cap but were modeled as though the full annual amount came out of each source.		

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
	H_1	X	X	X	X
	H_2	X	X	X	X
	H_1701_CHP	X	X	X	X
	H_1702_CHP	X	X	X	X
	H_1703_CHP	X	X	X	X
	H_1704_CHP	X	X	X	X
	H_4701_CHP	X	X	X	X
	H_1701_CH2	X	X	X	X
	H_1702_CH2	X	X	X	X
	H_1703_CH2	X	X	X	X
	H_1704_CH2	X	X	X	X
	H_4701_CH2	X	X	X	X
	SSM	X	X	X	X
	VCU	X	X		
	FL_1800_CHP	X	X		
	FL_1800_CH2	X	X		
	FL_1800_CHPM	X	X		
	FL_1800_CH2M	X	X		
	SSMBLAST			X	X
	HAUL1 to HAUL13			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☐

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)
	FL-1800-CHP	16.48 g/mol	108,290 cal/s	0.29
	FL-1800-CH2	16.48 g/mol	108,290 cal/s	0.29
	FL-1800-CHPM	16.35 lb/ lbmol	46,011,206.0 cal/s	6.102
	FL-1800-CH2M	16.35 lb/ lbmol	46,011,206.0 cal/s	6.102
	F-CS	58.69	744,787.5 cal/s	0.6862

16-Q: Volume and Related Sources

1	Were the dimensions of volume sources different from standard dimensions in the Air Quality Bureau (AQB) Modeling Guidelines? If not please explain how increment consumption status is determined for the missing installation dates below.	Yes☐	No☒
2	Describe the determination of sigma-Y and sigma-Z for fugitive sources.		
	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: Del Norte High School (350010023)		
	NO_2: Outside Carlsbad (350151005)		
	PM2.5: Hobbs-Jefferson (350450019)		
	PM10: Hobbs-Jefferson (350250008)		
	SO_2: Shiprock Substation (350451005)		
	Other:		

	Comments:			
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.		

16-T: Terrain

1	Was complex terrain used in the modeling? If not, describe why below.	Yes☒	No☐
2	What was the source of the terrain data?		
	USGS		

16-U: Modeling Files

1 Describe the modeling files: Below is a list of the folders for each pollutant and averaging period. SIL run folders contain both the short term and annual modeling runs. NAAQS and PSD increment folders are separated by averaging period. Annual modeling runs were based on the annual requested emissions. PM10 and PM2.5 24hr emission from MSSBLAST are the maximum hourly rate times the expected 6 hrs/day divided by 24 hrs in a day to calculate the average daily emissions rate.

File name (or folder and file name)	Pollutant(s)	Purpose (ROI/SIA, cumulative, culpability analysis, other)
SIL_CO	CO	ROI
SIL_SO2	SO2	ROI
SIL_NO2	NO2	ROI
SIL_PM10	PM10	ROI
SIL_PM25	PM2.5	ROI
SIL_H2S	H2S	ROI
NAAQS_NO2_1	NO2	cumulative
NAAQS_NO2_A (both NAAQS and PSD Increment)	NO2	cumulative
NAAQS_PM10_24	PM10	cumulative
NAAQS_PM25_24	PM2.5	cumulative
NAAQS_PM25_A (both NAAQS and PSD Increment)	PM2.5	cumulative
NAAQS_SO2_1	SO2	culpability

	NAAQS_SO2_3 (both NAAQS and PSD Increment)	SO2	culpability
	NAAQS_SO2_24 (both NAAQS and PSD Increment)	SO2	cumulative
	NAAQS_SO2_A (both NAAQS and PSD Increment)	SO2	cumulative
	NMAAQS_H2S	H2S	culpability
	PSD_PM10_24	PM10	cumulative
	PSD_PM25_24	PM2.5	cumulative

16-V: PSD New or Major Modification Applications

1	A new PSD major source or a major modification to an existing PSD major source requires additional analysis. Was preconstruction monitoring done (see 20.2.74.306 NMAC and PSD Preapplication Guidance on the AQB website)?	Yes☐	No☐
2	If not, did AQB approve an exemption from preconstruction monitoring?	Yes☐	No☐
3	Describe how preconstruction monitoring has been addressed or attach the approved preconstruction monitoring or monitoring exemption.		
4	Describe the additional impacts analysis required at 20.2.74.304 NMAC.		
5	If required, have ozone and secondary PM2.5 ambient impacts analyses been completed? If so describe below.	Yes☐	No☐

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☒
	For the SO2 – 1hr NAAQS standard a single receptor that was located within the Helios Compressor Station, Targa Northern Delaware fenceline was found to exceed the standard with all inventory sources included. An analysis of all sources, with the exclusion of the Helios Compressor Station, was run for the that single receptor which demonstrates that it is not exceeded by the aggregation of other sources. A separate NAAQS run was conducted that includes the Helios Compressor Station sources but excludes that single receptor within their fence line that demonstrates no NAAQS standard was exceeded. The folder titled NAAQS_SO2_1 contains a modeling files labeled "CopperheadNAAQS_SO2_NoHelios_2017-2021_SO2.XX" which contains that single receptor and all inventory sources with the exclusion of Helios to demonstrate compliance at that receptor. Files titled CopperheadNAAQS_SO2_1_2017-2021_SO2.XXX contain all inventory sources and the single receptor within the Helios Compressor Station fenceline has been excluded.		
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 - SIL	136.83	--	--	--	136.8	7.52	1819.51	628250	3566250	1104.59
NOx – 24hr - SIL	49.39	--	--	--	49.4	5	987.87	630900	3565300	1082.48
NOx - annual- SIL	4.51	--	--	--	4.5	1	450.89	629525.27	3564987.5	1093.91
CO-1 hr- SIL	434.01	--	--	--	434.0	2,000.00	21.70	628250	3566250	1104.59
CO-8 hr- SIL	270.78	--	--	--	270.8	500.00	54.16	630800	3565200	1081.96
PM10 – 24hr- SIL	22.50	--	--	--	22.5	5	450.00	629093.72	3564901.65	1096.39
PM10 – Annual- SIL	0.98	--	--	--	1.0	1	97.83	629525.27	3564987.5	1093.91
PM2.5 – 24hr- SIL	6.06	--	0.0917	--	6.1	1.2	512.24	629882.86	3564619.8	1090.62
PM2.5 – Annual- SIL	0.95	--	0.0029	--	0.9	0.13	729.56	629525.27	3564987.5	1093.91
SO2-1hr- SIL	152.00	--	--	--	152.0	7.8	1948.68	628250	3566250	1104.59

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)
SO2-3hr- SIL	108.96	--	--	--	109.0	25	435.86	628600	3566000	1101.49
SO2-24hr- SIL	39.90	--	--	--	39.9	5	797.96	630900	3565300	1082.48
SO2-Annual- SIL	1.51	--	--	--	1.5	1	151.30	629100	3565100	1097.18
H2S-1hr- SIL	9.87	--	--	--	9.9	1	986.93	629332.86	3564987.69	1095.91
H2S-1/2hr- SIL	9.87	--	--	--	9.9	5	197.39	629332.86	3564987.69	1095.91
NAAQS/NMAAQS Analysis										
NOx – 1hr-NMAAQS	129.61213	--	--	54.5	184.1	188.03	97.92	629765.79	3564987.26	1091.59
NOx - annual-NMAAQS	3.73	--	--	9.3	13.0	94.02	13.86	629525.27	3564987.5	1093.91
PM10 – 24hr-NMAAQS	27.25	35.19	--	37.3	64.5	150	43.03	629283.17	3564690.28	1094.51
PM2.5 – 24hr-NMAAQS	2.50	4.52	0.0917	16.5	21.1	35	60.31	629283.17	3564690.28	1094.51
PM2.5 – Annual-NMAAQS	0.95	1.59	0.0029	7.1	9.0	9	100.00	629525.27	3564987.5	1093.91
SO2-1hr-NAAQS	149.75	149.75	--		0.0	196.4	76.95	628000.00	3566250	1103.83
SO2-3hr-NMAAQS	96.95	391.80	--	--	97.0	1309.3	7.40	630600	3565100	1083.12
SO2-24hr-NAAQS	36.84	36.84	--	--	36.8	261.9	14.07	640000	3568000	1102.83
SO2-Annual-NAAQS	1.51	2.51	--	--	1.5	52.4	2.89	629100	3565100	1097.18
H2S-1hr-NMAAQS	8.80	10.44135	--		8.8	13.9	63.31	629300	3563900	1084.41
H2S-1/2hr-NMAAQS	8.80	10.44135	--		8.8	139.3	6.32	629300	3563900	1084.41
PSD Increment Analysis										
NOx - annual-PSD	3.73	--	--	--	3.7	25	14.92	629525.27	3564987.5	1093.91
PM10 – 24hr-PSD	28.79	28.79	--	--	28.8	30	95.98	629093.72	3564901.65	1096.39
PM2.5 – 24hr-PSD	2.30	3.79	0.0917	--	2.3	9	25.60	629283.17	3564690.28	1094.51
PM2.5 – Annual-PSD	0.95	1.59	0.0029	--	0.9	4	23.64	629525.27	3564987.5	1093.91
SO2-3hr-PSD	96.95	391.80	--	--	97.0	512	18.94	630600	3565100	1083.12
SO2-24hr-PSD	36.84	36.84	--	--	36.8	91	40.49	640000	3568000	1102.83
SO2-Annual-PSD	1.51	2.51	--	--	1.5	20	7.57	629100	3565100	1097.18

16-X: Summary/conclusions

1	A statement that modeling requirements have been satisfied and that the permit can be issued.
	As shown above the modeling meets the required standards.

From: Kassanjee, Sahil, ENV
To: Laura Worthen-Lodes
Subject: RE: [EXTERNAL] Targa Midstream - Copperhead Gas Plant
Date: Monday, July 14, 2025 12:58:05 PM
Attachments: image001.png
image002.png

Laura,

I reviewed the modeling protocol for Copperhead Gas plant, and it may be modeled.

For the off site inventory, I suggest repulling surrounding sources from out database to ensure sources are up to date.

Let me know if you have any questions.

Sahil Kassanjee
Environmental Scientist & Specialist
NMED – AQB – Air Modeling

From: Laura Worthen-Lodes <Laura.Worthen-Lodes@Altamira-US.com>
Sent: Sunday, July 13, 2025 8:33 PM
To: Mustafa, Sufi A., ENV <sufi.mustafa@env.nm.gov>
Cc: Kassanjee, Sahil, ENV <sahil.kassanjee@env.nm.gov>; cschroder@targaresources.com; Andries, Robert L. <randries@targaresources.com>
Subject: RE: [EXTERNAL] Targa Midstream - Copperhead Gas Plant

Sufi and Sahil,
Targa is meeting with Julia Thursday 7/17 and intends to resubmit the Copperhead permit application on 7/21. We would like to confirm that the modeling protocol is still valid. We have updated the protocol to reflect the most recent monitoring concentrations in the NMED guidance and added a table of the emissions sources. Please let me know if this protocol is approved.

We are rerunning the modeling you have previously reviewed to remove the generators (and associated operating scenarios) since those are no longer needed and to reflect lower CO emissions from the heaters. There are no other changes from what you previously reviewed for the facility. Do you want us to update the off-site inventory from what was reviewed in February?

I appreciate your assistance.

Thanks,

Laura Worthen Lodes, PE
Chief Engineering Officer | O 405.702.1618 | C 405.919.4129

From: Mustafa, Sufi A., ENV <sufi.mustafa@env.nm.gov>
Sent: Wednesday, August 14, 2024 11:04 AM
To: Laura Worthen-Lodes <Laura.Worthen-Lodes@Altamira-US.com>
Subject: RE: [EXTERNAL] Targa Midstream - Copperhead Gas Plant

Laura
If you are using listed background concentration from an appropriate monitor you do not need to submit a new modeling protocol.
Thank you.

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

"Innovation, Science, Collaboration, Compliance"

From: Laura Worthen-Lodes <Laura.Worthen-Lodes@Altamira-US.com>
Sent: Tuesday, August 13, 2024 3:28 PM
To: Mustafa, Sufi A., ENV <sufi.mustafa@env.nm.gov>
Subject: RE: [EXTERNAL] Targa Midstream - Copperhead Gas Plant

Sufi,
This project ended up on hold and was not submitted back in January. We are going to submit it later this month. Do you need an updated protocol to reflect the updated background from the June 2024 modeling guidance updates?

Laura Worthen Lodes, PE
Chief Engineering Officer | O 405.702.1618 | C 405.919.4129

From: Mustafa, Sufi A., ENV <sufi.mustafa@env.nm.gov>
Sent: Wednesday, January 10, 2024 2:48 PM
To: Laura Worthen-Lodes <Laura.Worthen-Lodes@Altamira-US.com>
Subject: RE: [EXTERNAL] Targa Midstream - Copperhead Gas Plant

Laura
The modeling protocol seems fine. You may want to remove the following statement under Table 2. You have already mentioned that you will use surrounding sources for SO2 CIA.
4. The SO_2 data is obtained from Table 21 of the NMAQB modeling guidelines and is the 1-hour background concentration. No monitoring stations are near the plant so the Bloomfield location was chosen.

Note: We have recently updated our modeling guidelines document on our website.

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

"Innovation, Science, Collaboration, Compliance"

From: Laura Worthen-Lodes <Laura.Worthen-Lodes@Altamira-US.com>
Sent: Wednesday, January 10, 2024 11:18 AM
To: Mustafa, Sufi A., ENV <sufi.mustafa@env.nm.gov>
Subject: [EXTERNAL] Targa Midstream - Copperhead Gas Plant

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Sufi,
Please see the attached protocol for the Targa Copperhead Gas Plant. The gas plant will be located adjacent to the existing Targa Copperhead Compressor Station.

Laura Worthen Lodes, PE
Chief Engineering Officer | O 405.702.1618 | C 405.919.4129 | altamira-us.com
525 Central Park Dr., Suite 500
Oklahoma City, OK 73105

Section 17

Compliance Test History

(Submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

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

N/A – there is no compliance test history for this facility. This is a proposed construction project.

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.

The required Compliance History Disclosure Form is attached.

According to 20.2.72.203.A(3), all information, including all calculations and computations, to describe the specific chemical and physical nature and to estimate the maximum quantities of any regulated air contaminants the source will emit through routine operations after construction, modification or installation is completed, and estimate maximum potential emissions during malfunction, startup, shutdown must be included with an application. With respect to a toxic air pollutant as defined by Subsection H of 20.2.72.401 NMAC this requirement only applies when the toxic air pollutant is emitted in such a manner that a permit is required under the provisions of 20.2.72.400 NMAC - 20.2.72.499 NMAC. Calculations and computations for toxic air pollutants are included in this section. No toxic air pollutant, as defined in 20.2.72.401 NMAC, is emitted in a quantity exceeding the screening threshold established in 20.2.72.502 Table A and Table B.

Section 22: Certification

Company Name: Targa Midstream Services

I, Jimmy E Oxford, 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 16th day of July, 2025, upon my oath or affirmation, before a notary of the State of Texas.

*Signature

7/16/2025
Date

Jimmy E Oxford
Printed Name

V.P. Operations
Title

Scribed and sworn before me on this 16th day of July, 2025.

My authorization as a notary of the State of Texas expires on the 20th day of January, 2026.

Notary's Signature

7/16/2025
Date

BETTY SUE HERNANDEZ
Notary Public, State of Texas
Comm. Expires 01-20-2026
Notary ID 133543174

Betty Sue Hernandez
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.