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		AIRS No.:

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. See Section 1-I for submittal instructions for other permits.

This application is submitted as (check all that apply)**:** ☐ Request for a No Permit Required Determination (no fee)
☐ **Updating** an application currently under NMED review. Include this page and all pages that are being updated (no fee required).
Construction Status: ☐ Not Constructed ☐ Existing Permitted (or NOI) Facility ☐ Existing Non-permitted (or NOI) Facility
Minor Source: ☐ a NOI 20.2.73 NMAC **X** 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:

X 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.

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

X Check No.: **16368** in the amount of **$500.00**

X 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.

☐ This facility qualifies to receive assistance from the Small Business Environmental Assistance program (SBEAP) and qualifies for 50% of the normal application and permit fees. Enclosed is a check for 50% of the normal application fee which will be verified with the Small Business Certification Form for your company.

☐ This facility qualifies to receive assistance from the Small Business Environmental Assistance Program (SBEAP) but does not qualify for 50% of the normal application and permit fees. To see if you qualify for SBEAP assistance and for the small business certification form go to https://www.env.nm.gov/aqb/sbap/small_business_criteria.html).

Citation: Please provide the **low level citation** under which this application is being submitted: **20.2. 72.219.D NMAC**
(e.g. application for a new minor source would be 20.2.72.200.A NMAC, one example for a Technical Permit Revision is 20.2.72.219.B.1.b NMAC, a Title V acid rain application would be: 20.2.70.200.C NMAC)

Section 1 – Facility Information

Section 1-A: Company Information

		AI # if known (see 1st 3 to 5 #s of permit IDEA ID No.): **36536**	Updating Permit/NOI #: **7200-M2**
1	Facility Name: **Road Runner Gas Processing 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): **From Allsup's store in Loving, go South on Pecos Hwy to Higby Hole Road to Bounds Road. Turn West for 0.5 miles to facility on North side of road.**		
2	Plant Operator Company Name: **Lucid Energy Delaware, LLC**	Phone/Fax: **575-748-4555/575-748-4275**	
a	Plant Operator Address: **PO Box 158, Artesia, NM 88210**		

b	Plant Operator's New Mexico Corporate ID or Tax ID: **36-4825214**	
3	Plant Owner(s) name(s): **Lucid Energy Delaware, LLC**	Phone/Fax: **575-748-4555/575-748-4275**
a	Plant Owner(s) Mailing Address(s): **PO Box 158, Artesia, NM 88210**	
4	Bill To (Company): **Lucid Energy Delaware, LLC**	Phone/Fax: **575-748-4555/575-748-4275**
a	Mailing Address: **PO Box 158, Artesia, NM 88210**	E-mail: **MEales@lucid-energy.com**
5	**X** Preparer: **X** Consultant: **Martin Schluep, Alliant Environmental, LLC**	Phone/Fax: **505-205-4819**
a	Mailing Address: **7804 Pan American Fwy. NE, Suite 5, Albuquerque, NM 87109**	E-mail: **mschluep@alliantenv.com**
6	Plant Operator Contact: **Nicholas Brown**	Phone/Fax: **575-748-4555/575-748-4275**
a	Address: **PO Box 158, Artesia, NM 88210**	E-mail: **NBrown@lucid-energy.com**
7	Air Permit Contact: **Matthew Eales**	Title: **Vice President of EHSR**
a	E-mail: **MEales@lucid-energy.com**	Phone/Fax: **575-748-4555/575-748-4275**
b	Mailing Address: **PO Box 158, Artesia, NM 88210**	
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? **X** Yes ☐ No	1.b If yes to question 1.a, is it currently operating in New Mexico? **X** 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 **X** 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? **X** Yes ☐ No
3	Is the facility currently shut down? ☐ Yes **X** 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 **X** 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 **X** N/A	
6	Does this facility have a Title V operating permit (20.2.70 NMAC)? **X** Yes ☐ No	If yes, the permit No. is: **Not yet assigned**
7	Has this facility been issued a No Permit Required (NPR)? ☐ Yes **X** No	If yes, the NPR No. is:
8	Has this facility been issued a Notice of Intent (NOI)? ☐ Yes **X** No	If yes, the NOI No. is:
9	Does this facility have a construction permit (20.2.72/20.2.74 NMAC)? **X** Yes ☐ No	If yes, the permit No. is: **7200-M2**
10	Is this facility registered under a General permit (GCP-1, GCP-2, etc.)? ☐ Yes **X** No	If yes, the register No. is:

Section 1-C: Facility Input Capacity & Production Rate

1	What is the facility's maximum input capacity, specify units (reference here and list capacities in Section 20, if more room is required)			
a	Current	Hourly: **18.33 mmscf**	Daily: **440 mmscf**	Annually: **160,600 mmscf**
b	Proposed	Hourly: **36.66 mmscf**	Daily: **880 mmscf**	Annually: **321,200 mscf**
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: **18.33 mmscf**	Daily: **440 mmscf**	Annually: **160,600 mmscf**
b	Proposed	Hourly: **36.66 mmscf**	Daily: **880 mmscf**	Annually: **321,200 mscf**

Section 1-D: Facility Location Information

1	Section: **32**	Range: **28E**	Township: **23S**	County: **Eddy**	Elevation (ft): **3,124**
2	UTM Zone: ☐ 12 or **X** 13			Datum: ☐ NAD 27 **X** NAD 83 ☐ WGS 84	
a	UTM E (in meters, to nearest 10 meters): **583,982.0**			UTM N (in meters, to nearest 10 meters): **3,570,216.0**	
b	**AND** Latitude (deg., min., sec.): **32deg 15min 56.71sec**			Longitude (deg., min., sec.): **-104deg 6min 29.97sec**	
3	Name and zip code of nearest New Mexico town: **Loving, NM 88256**				
4	Detailed Driving Instructions from nearest NM town (attach a road map if necessary): **From Allsup's store in Loving, go South on Pecos Hwy to Higby Hole Road to Bounds Road. Turn West for 0.5 miles to facility on North side of road.**				
5	The facility is **1.5 miles southwest of Loving, NM**.				
6	Status of land at facility (check one): **X** Private ☐ Indian/Pueblo ☐ Federal BLM ☐ Federal Forest Service ☐ Other (specify)				
7	List all municipalities, Indian tribes, and counties within a ten (10) mile radius (20.2.72.203.B.2 NMAC) of the property on which the facility is proposed to be constructed or operated: **Loving, NM; Eddy County**				
8	**20.2.72** NMAC applications **only**: Will the property on which the facility is proposed to be constructed or operated be closer than 50 km (31 miles) to other states, Bernalillo County, or a Class I area (see www.env.nm.gov/aqb/modeling/class1areas.html)? **X** Yes ☐ No (20.2.72.206.A.7 NMAC) If yes, list all with corresponding distances in kilometers: **Lea County (23 miles east); Texas (19 miles south)**				
9	Name nearest Class I area: **Carlsbad Caverns National Park**				
10	Shortest distance (in km) from facility boundary to the boundary of the nearest Class I area (to the nearest 10 meters): **32.5 km**				
11	Distance (meters) from the perimeter of the Area of Operations (AO is defined as the plant site inclusive of all disturbed lands, including mining overburden removal areas) to nearest residence, school or occupied structure: **0.8 mile**				
12	Method(s) used to delineate the Restricted Area: **Continuous fencing, gated entrance and 24/7 on-site surveillance.** "**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 **X** 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? **X** No ☐ Yes If yes, what is the name and permit number (if known) of the other facility?				

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

1	Facility **maximum** operating ($\frac{\text{hours}}{\text{day}}$): **24**	($\frac{\text{days}}{\text{week}}$): **7**	($\frac{\text{weeks}}{\text{year}}$): **52**	($\frac{\text{hours}}{\text{year}}$): **8,760**		
2	Facility's maximum daily operating schedule (if less than 24 $\frac{\text{hours}}{\text{day}}$)? Start:		☐AM ☐PM	End:	☐AM ☐PM	
3	Month and year of anticipated start of construction: **October 1, 2020 or as soon as permit is issued**					
4	Month and year of anticipated construction completion: **April 2021**					
5	Month and year of anticipated startup of new or modified facility: **April 2021**					
6	Will this facility operate at this site for more than one year? **X** 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 **X** 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 **X** 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? **X** 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 **X** No		
4	Will this facility be a source of federal Hazardous Air Pollutants (HAP)? **X** 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** **X Minor** (**X** <10 tpy of any single HAP **AND** **X** <25 tpy of any combination of HAPS)		
5	Is any unit exempt under 20.2.72.202.B.3 NMAC? ☐ Yes **X** No		
a	If yes, include the name of company providing commercial electric power to the facility: _____ Commercial power is purchased from a commercial utility company, which specifically does not include power generated on site for the sole purpose of the user.		

Section 1-G: Streamline Application

(This section applies to 20.2.72.300 NMAC Streamline applications only)

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

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

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

1	Responsible Official (R.O.) (20.2.70.300.D.2 NMAC):		Phone:
a	R.O. Title:	R.O. e-mail:	
b	R. O. Address:		
2	Alternate Responsible Official (20.2.70.300.D.2 NMAC):		Phone:
a	A. R.O. Title:	A. R.O. e-mail:	
b	A. R. O. Address:		
3	Company's Corporate or Partnership Relationship to any other Air Quality Permittee (List the names of any companies that have operating (20.2.70 NMAC) permits and with whom the applicant for this permit has a corporate or partnership relationship):		
4	Name of Parent Company ("Parent Company" means the primary name of the organization that owns the company to be permitted wholly or in part.):		
a	Address of Parent Company:		
5	Names of Subsidiary Companies ("Subsidiary Companies" means organizations, branches, divisions or subsidiaries, which are owned, wholly or in part, by the company to be permitted.):		
6	Telephone numbers & names of the owners' agents and site contacts familiar with plant operations:		
7	Affected Programs to include Other States, local air pollution control programs (i.e. Bernalillo) and Indian tribes: Will the property on which the facility is proposed to be constructed or operated be closer than 80 km (50 miles) from other states, local pollution control programs, and Indian tribes and pueblos (20.2.70.402.A.2 and 20.2.70.7.B)? If yes, state which ones and provide the distances in kilometers:		

Section 1-I – Submittal Requirements

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

Hard Copy Submittal Requirements:

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

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

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

Electronic files sent by (check one):

☐ CD/DVD attached to paper application

X secure electronic transfer. Air Permit Contact Name_Martin Schluep_____

Email_mschluep@alliantenv.com_____

Phone number _505-205-4819_____

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

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

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

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

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

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

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

2) The documents should also be submitted in Microsoft Office compatible file format (Word, Excel, etc.) allowing us to access the text and formulas in the documents (copy & paste). Any documents that cannot be submitted in a Microsoft Office compatible

format shall be saved as a PDF file from within the electronic document that created the file. If you are unable to provide Microsoft office compatible electronic files or internally generated PDF files of files (items that were not created electronically: i.e. brochures, maps, graphics, etc,), submit these items in hard copy format. We must be able to review the formulas and inputs that calculated the emissions.

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

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

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Table 2-A: Regulated Emission Sources

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

Unit Number[1]	Source Description	Make	Model #	Serial #	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.
EP-1	SSM Flare (Pilot with auto ignition)	Zeeco Inc.	FL5100	31927	0.005 MMScfd	0.005 MMScfd	2017 2017	NA EP-1	31000205	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
2/3-EP-1	SSM Flare (Pilot with auto ignition)	Zeeco Inc.	FL5100	TBD	0.01 MMScfd	0.01 MMScfd	TBD TBD	NA 2/3-EP-1	31000205	☐ Existing (unchanged) ☐ To be Removed X New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
4-EP-1	SSM Flare (Pilot with auto ignition)	Zeeco Inc.	FL5100	TBD	0.005 MMScfd	0.005 MMScfd	TBD TBD	NA 4-EP-1	31000205	☐ Existing (unchanged) ☐ To be Removed X New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
EP-2	Trim Reboiler	Fabsco Shell & Tube	E-207	516-11764-2	15.95 MMBtu/hr	15.95 MMBtu/hr	2017 2017	NA EP-2	31000404	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
2-EP-2	Trim Reboiler	Fabsco Shell & Tube	E-207	TBD	17.55 MMBtu/hr	17.55 MMBtu/hr	TBD TBD	NA 2-EP-2	31000404	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
3-EP-2	Trim Reboiler	Fabsco Shell & Tube	E-207	TBD	17.55 MMBtu/hr	17.55 MMBtu/hr	TBD TBD	NA 3-EP-2	31000404	☐ Existing (unchanged) ☐ To be Removed X New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
4-EP-2	Trim Reboiler	Fabsco Shell & Tube	E-207	TBD	17.55 MMBtu/hr	17.55 MMBtu/hr	TBD TBD	NA 4-EP-2	31000404	☐ Existing (unchanged) ☐ To be Removed X New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
EP-3A	Amine Reboiler	Patrick	2BKU30/ 5A-312	717-5145A	55 MMBtu/hr	55 MMBtu/hr	2017 2017	NA EP-3A	31000404	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
EP-3B	Amine Reboiler	Patrick	2BKU30/ 5A-312	TBD	55 MMBtu/hr	55 MMBtu/hr	TBD TBD	NA EP-3B	31000404	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
EP-4	Glycol Reboiler	Reset Energy	H-2801	F-9	3 MMBtu/hr	3 MMBtu/hr	2017 2017	NA EP-4	31000302	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
2-EP-4	Glycol Reboiler	TBD	TBD	TBD	3 MMBtu/hr	3 MMBtu/hr	TBD TBD	NA 2-EP-4	31000302	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
3-EP-4	Glycol Reboiler	TBD	TBD	TBD	3 MMBtu/hr	3 MMBtu/hr	TBD TBD	NA 2-EP-4	31000302	☐ Existing (unchanged) ☐ To be Removed X New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
4-EP-4	Glycol Reboiler	TBD	TBD	TBD	3 MMBtu/hr	3 MMBtu/hr	TBD TBD	NA 2-EP-4	31000302	☐ Existing (unchanged) ☐ To be Removed X New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
EP-5	Regen Reboiler	Heatec	HCI5010-40-G	HI16-201	5.61 MMBtu/hr	5.61 MMBtu/hr	2/2017 2017	NA EP-5	31000404	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
2-EP-5	Regen Reboiler	TBD	TBD	TBD	5.61 MMBtu/hr	5.61 MMBtu/hr	TBD TBD	NA 2-EP-5	31000404	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
3-EP-5	Regen Reboiler	TBD	TBD	TBD	5.61 MMBtu/hr	5.61 MMBtu/hr	TBD TBD	NA 2-EP-5	31000404	☐ Existing (unchanged) ☐ To be Removed X New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
4-EP-5	Regen Reboiler	TBD	TBD	TBD	5.61 MMBtu/hr	5.61 MMBtu/hr	TBD TBD	NA 2-EP-5	31000404	☐ Existing (unchanged) ☐ To be Removed X New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
EP-6	Stabilizer Heater	Phoenix	PX-180	17169	18 MMBtu/hr	18 MMBtu/hr	2017 2017	NA EP-6	31000404	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
2-EP-6	Stabilizer Heater	TBD	TBD	TBD	18 MMBtu/hr	18 MMBtu/hr	TBD TBD	NA 2-EP-6	31000404	☐ Existing (unchanged) ☐ To be Removed X New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
EP-7	Glycol Dehydrator	Reset Energy	T-2707	153	220 mmscfd	220 mmscfd	2017 2017	EP-9 EP-9	31000302	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
2-EP-7	Glycol Dehydrator	TBD	TBD	TBD	220 mmscfd	220 mmscfd	TBD TBD	EP-9 EP-9	31000302	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
3-EP-7	Glycol Dehydrator	TBD	TBD	TBD	220 mmscfd	220 mmscfd	TBD TBD	EP-9 EP-9	31000302	☐ Existing (unchanged) ☐ To be Removed X New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA

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.
4-EP-7	Glycol Dehydrator	TBD	TBD	TBD	220 mmscfd	220 mmscfd	TBD TBD	EP-9 EP-9	31000302	☐ Existing (unchanged) ☐ To be Removed X New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
EP-8	Amine Vent	PBP Fabrication	V-5520	493	220 mmscfd	220 mmscfd	2017 2017	EP-9 EP-9	31000305	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
EP-9	Thermal Oxidizer	Zeeco Inc	TO-55	32339	71 MMBtu/hr	71 MMBtu/hr	2017 2017	NA EP-9	31000404	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
2-EP-9	Thermal Oxidizer	Zeeco Inc	TO-55	N/A	71 MMBtu/hr	71 MMBtu/hr	NA NA	NA EP-9	31000404	☐ Existing (unchanged) X To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
SSM-misc	Startup, Shutdown, Maintenance Miscellaneous Emissions	TBD	TBD	TBD	NA	NA	TBD TBD	TBD TBD	31088811	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
SSMB	Startup, Shutdown, Maintenance Blowdowns Emissions	TBD	TBD	TBD	NA	NA	TBD TBD	TBD TBD	31088811	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
COMB-1	Combustor	Zeeco Inc	VCU-7.5.40 Flare	31974-001	0.00156 mmscfd	0.00156 mmscfd	2017 2017	NA COMB-1	31000404	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
LOAD	Loadout Emissions	TBD	TBD	TBD	NA	NA	TBD TBD		30205052	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
HAUL	Haul Road Emissions	TBD	TBD	TBD	NA	NA	TBD TBD		30205054	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
FUG	Fugitive Emissions	TBD	TBD	TBD	NA	NA	TBD TBD		2310011500	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
FUG2	Fugitive Emissions	TBD	TBD	TBD	NA	NA	TBD TBD		2310011500	☐ Existing (unchanged) ☐ To be Removed X New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
T-1	Condensate Storage Tank	Tank &Vessel Boilers LP	NA	201723	1000 bbl	1000 bbl	2017 2017	COMB-1 COMB-1	40400312	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
T-2	Condensate Storage Tank	Tank &Vessel Boilers LP	NA	201724	1000 bbl	1000 bbl	2017 2017	COMB-1 COMB-1	40400312	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
T-3	Condensate Storage Tank	Tank &Vessel Boilers LP	NA	201720	1000 bbl	1000 bbl	2017 2017	COMB-1 COMB-1	40400312	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
T-4	Condensate Storage Tank	Tank &Vessel Boilers LP	NA	201721	1000 bbl	1000 bbl	2017 2017	COMB-1 COMB-1	40400312	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
T-5	Condensate Storage Tank	Tank &Vessel Boilers LP	NA	201722	1000 bbl	1000 bbl	2017 2017	COMB-1 COMB-1	40400312	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
T-6	Waste Water Tank	Palmer	NA	ST-1711323	400 bbl	400 bbl	8/2017 2017	NA NA	40400312	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
D-1	Electric Driven Residue Compressor	Ariel	KBZ/6	F54680	60 MMscf/d	60 MMscf/d	9/2017 2017	NA NA	3100203	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
D-2	Electric Driven Residue Compressor	Ariel	KBZ/6	F54701	60 MMscf/d	60 MMscf/d	9/2017 2017	NA NA	3100203	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
D-3	Electric Driven Residue Compressor	Ariel	KBZ/6	F54720	60 MMscf/d	60 MMscf/d	9/2017 2017	NA NA	3100203	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
D-4	Electric Driven Residue Compressor	Ariel	KBZ/6	F54750	60 MMscf/d	60 MMscf/d	9/2017 2017	NA NA	3100203	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
2-D-1	Electric Driven Flash Gas Compressor	Ariel	JGH/4	F54483	40 MMscf/d	40 MMscf/d	8/2017 2017	NA NA	3100203	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
2-D-2	Electric Driven Flash Gas Compressor	Ariel	JGH/4	F54484	40 MMscf/d	40 MMscf/d	8/2017 2017	NA NA	3100203	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA

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.
2-D-3	Electric Driven Flash Gas Compressor	Ariel	KBZ/6	TBD	TBD	TBD	TBD TBD	NA NA	3100203	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
2-D-4	Electric Driven Flash Gas Compressor	Ariel	KBZ/6	TBD	TBD	TBD	TBD TBD	NA NA	3100203	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
3-D-1	Electric Driven Residue Compressor	Ariel	KBZ/6	TBD	TBD	TBD	TBD TBD	NA NA	3100203	☐ Existing (unchanged) ☐ To be Removed X New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
3-D-2	Electric Driven Residue Compressor	Ariel	KBZ/6	TBD	TBD	TBD	TBD TBD	NA NA	3100203	☐ Existing (unchanged) ☐ To be Removed X New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
3-D-3	Electric Driven Residue Compressor	Ariel	KBZ/6	TBD	TBD	TBD	TBD TBD	NA NA	3100203	☐ Existing (unchanged) ☐ To be Removed X New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
3-D-4	Electric Driven Residue Compressor	Ariel	KBZ/6	TBD	TBD	TBD	TBD TBD	NA NA	3100203	☐ Existing (unchanged) ☐ To be Removed X New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
4-D-1	Electric Driven Residue Compressor	Ariel	KBZ/6	TBD	TBD	TBD	TBD TBD	NA NA	3100203	☐ Existing (unchanged) ☐ To be Removed X New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
4-D-2	Electric Driven Residue Compressor	Ariel	KBZ/6	TBD	TBD	TBD	TBD TBD	NA NA	3100203	☐ Existing (unchanged) ☐ To be Removed X New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
4-D-3	Electric Driven Residue Compressor	Ariel	KBZ/6	TBD	TBD	TBD	TBD TBD	NA NA	3100203	☐ Existing (unchanged) ☐ To be Removed X New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA
4-D-4	Electric Driven Residue Compressor	Ariel	KBZ/6	TBD	TBD	TBD	TBD TBD	NA NA	3100203	☐ Existing (unchanged) ☐ To be Removed X New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	NA	NA

[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 http://www.env.nm.gov/aqb/forms/InsignificantListTitleV.pdf . TV sources may elect to enter both TV Insignificant Activities and Part 72 Exemptions on this form.

Unit Number	Source Description	Manufacturer	Model No.	Max Capacity	List Specific 20.2.72.202 NMAC Exemption (e.g. 20.2.72.202.B.5)	Date of Manufacture /Reconstruction[2]	For Each Piece of Equipment, Check Onc
			Serial No.	Capacity Units	Insignificant Activity citation (e.g. IA List Item #1.a)	Date of Installation /Construction[2]	
T-7	Used Oil/Slop Oil/Skid Runoff	NA	NA	400	20.72.202.B(2)(a)	2020	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			NA	BBL	IA List Item #1.a)	TBD	
T-8	Used Oil/Slop Oil/Skid Runoff	NA	NA	400	20.72.202.B(2)(a)	2020	X Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			NA	BBL	IA List Item #1.a)	TBD	
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
							☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced

[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-1	Condenser	2017	VOC, HAP	EP-7, 2-EP-7, 3-EP-7, 4-EP-7	98%	GlyCalc
COMB-1	Combustor	2017	VOC	T-1, T-2, T-3, T-4, T-5	95%	Manufacturer Spec
EP-9	Thermal Oxidizer	2017	VOC, HAP	EP-8	99.9%	Manufacturer Spec

[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
EP-2	1.56	6.85	1.31	5.75	0.09	0.38	0.00	0.00	0.12	0.52	0.12	0.52	0.12	0.52	<0.01	<0.01		
2-EP-2	1.72	7.54	1.45	6.33	0.09	0.41	0.00	0.00	0.13	0.57	0.13	0.57	0.13	0.57	<0.01	<0.01		
3-EP-2	1.72	7.54	1.45	6.33	0.09	0.41	0.00	0.00	0.13	0.57	0.13	0.57	0.13	0.57	<0.01	<0.01		
4-EP-2	1.72	7.54	1.45	6.33	0.09	0.41	0.00	0.00	0.13	0.57	0.13	0.57	0.13	0.57	<0.01	<0.01		
EP-3A	1.74	7.63	3.54	15.48	0.30	1.30	0.00	0.00	0.41	1.79	0.41	1.79	0.41	1.79	<0.01	<0.01		
EP-3B	1.74	7.63	3.54	15.48	0.30	1.30	0.00	0.00	0.41	1.79	0.41	1.79	0.41	1.79	<0.01	<0.01		
EP-4	0.29	1.29	0.25	1.08	0.02	0.07	0.00	0.00	0.02	0.10	0.02	0.10	0.02	0.10	<0.01	<0.01		
2-EP-4	0.29	1.29	0.25	1.08	0.02	0.07	0.00	0.00	0.02	0.10	0.02	0.10	0.02	0.10	<0.01	<0.01		
3-EP-4	0.29	1.29	0.25	1.08	0.02	0.07	0.00	0.00	0.02	0.10	0.02	0.10	0.02	0.10	<0.01	<0.01		
4-EP-4	0.29	1.29	0.25	1.08	0.02	0.07	0.00	0.00	0.02	0.10	0.02	0.10	0.02	0.10	<0.01	<0.01		
EP-5	0.55	2.41	0.46	2.02	0.03	0.13	0.00	0.00	0.04	0.18	0.04	0.18	0.04	0.18	<0.01	<0.01		
2-EP-5	0.71	3.13	0.60	2.63	0.04	0.17	0.00	0.00	0.04	0.18	0.04	0.18	0.04	0.18	<0.01	<0.01		
3-EP-5	0.71	3.13	0.60	2.63	0.04	0.17	0.00	0.00	0.04	0.18	0.04	0.18	0.04	0.18	<0.01	<0.01		
4-EP-5	0.71	3.13	0.60	2.63	0.04	0.17	0.00	0.00	0.04	0.18	0.04	0.18	0.04	0.18	<0.01	<0.01		
EP-6	1.76	7.73	1.48	6.49	0.10	0.43	0.00	0.00	0.13	0.59	0.13	0.59	0.13	0.59	<0.01	<0.01		
2-EP-6	1.76	7.73	1.48	6.49	0.10	0.43	0.00	0.00	0.13	0.59	0.13	0.59	0.13	0.59	<0.01	<0.01		
EP-7					123.77	542.13												
2-EP-7					123.77	542.13												
3-EP-7					123.77	542.13												
4-EP-7					123.77	542.13												
EP-8					380.65	1667.23	0.00	0.00							2.11	9.22		
EP-9	No emissions from this unit in an uncontrolled scenario																	
EP-1	0.17	0.76	0.79	3.46	1.68	7.37	0.31	1.35							0.003	0.01		
2/3 EP-1	0.35	1.52	1.58	6.92	3.37	14.74	0.61	2.69							0.01	0.03		
4-EP-1	0.17	0.76	0.79	3.46	1.68	7.37	0.31	1.35							0.003	0.01		
T-1::T-5					24.92	109.16												
T-6					0.14	0.63									0.002	0.01		
COMB-1					-	-												
LOAD					8.71	45.97												
FUG					2.80	12.25									0.00	0.00		
FUG2					2.80	12.25												
HAUL					-	-			0.11	0.39	0.11	0.39	0.01	0.04				
Totals	18.30	80.17	22.10	96.79	923.22	4,051.50	1.23	5.38	1.96	8.51	1.96	8.51	1.87	8.17	2.12	9.29		

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

Table 2-E: Requested Allowable Emissions

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

Unit No.	NOx		CO		VOC		SOx		PM[1]		PM10[1]		PM2.5[1]		H_2S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
EP-2	1.56	6.85	1.31	5.75	0.09	0.38	0.00	0.00	0.12	0.52	0.12	0.52	0.12	0.52	0.00	0.00		
2-EP-2	1.72	7.54	1.45	6.33	0.09	0.41	0.00	0.00	0.13	0.57	0.13	0.57	0.13	0.57	0.00	0.00		
3-EP-2	1.72	7.54	1.45	6.33	0.09	0.41	0.00	0.00	0.13	0.57	0.13	0.57	0.13	0.57	0.00	0.00		
4-EP-2	1.72	7.54	1.45	6.33	0.09	0.41	0.00	0.00	0.13	0.57	0.13	0.57	0.13	0.57	0.00	0.00		
EP-3A	1.74	7.63	3.54	15.48	0.30	1.30	0.00	0.00	0.41	1.79	0.41	1.79	0.41	1.79	0.00	0.00		
EP-3B	1.74	7.63	3.54	15.48	0.30	1.30	0.00	0.00	0.41	1.79	0.41	1.79	0.41	1.79	0.00	0.00		
EP-4	0.29	1.29	0.25	1.08	0.02	0.07	0.00	0.00	0.02	0.10	0.02	0.10	0.02	0.10	0.00	0.00		
2-EP-4	0.29	1.29	0.25	1.08	0.02	0.07	0.00	0.00	0.02	0.10	0.02	0.10	0.02	0.10	0.00	0.00		
3-EP-4	0.29	1.29	0.25	1.08	0.02	0.07	0.00	0.00	0.02	0.10	0.02	0.10	0.02	0.10	0.00	0.00		
4-EP-4	0.29	1.29	0.25	1.08	0.02	0.07	0.00	0.00	0.02	0.10	0.02	0.10	0.02	0.10	0.00	0.00		
EP-5	0.55	2.41	0.46	2.02	0.03	0.13	0.00	0.00	0.04	0.18	0.04	0.18	0.04	0.18	0.00	0.00		
2-EP-5	0.71	3.13	0.60	2.63	0.04	0.17	0.00	0.00	0.04	0.18	0.04	0.18	0.04	0.18	0.00	0.00		
3-EP-5	0.71	3.13	0.60	2.63	0.04	0.17	0.00	0.00	0.04	0.18	0.04	0.18	0.04	0.18	0.00	0.00		
4-EP-5	0.71	3.13	0.60	2.63	0.04	0.17	0.00	0.00	0.04	0.18	0.04	0.18	0.04	0.18	0.00	0.00		
EP-6	1.76	7.73	1.48	6.49	0.10	0.43	0.00	0.00	0.13	0.59	0.13	0.59	0.13	0.59	0.00	0.00		
2-EP-6	1.76	7.73	1.48	6.49	0.10	0.43	0.00	0.00	0.13	0.59	0.13	0.59	0.13	0.59	0.00	0.00		
EP-7					0.12	0.54									0.00	0.00		
2-EP-7					0.12	0.54									0.00	0.00		
3-EP-7					0.12	0.54									0.00	0.00		
4-EP-7					0.12	0.54									0.00	0.00		
EP-8					0.38	1.67												
EP-9	5.49	24.06	2.98	13.05	0.88	1.67	3.96	17.34	0.60	2.63	0.60	2.63	0.60	2.63	0.00	0.01		
EP-1	0.17	0.76	0.79	3.46	1.68	7.37	0.31	1.35							0.16	0.72		
2/3 EP-1	0.35	1.52	1.58	6.92	3.37	14.74	0.61	2.69							0.33	1.43		
4-EP-1	0.17	0.76	0.79	3.46	1.68	7.37	0.31	1.35							0.16	0.72		
T-1::T-5					1.25	5.46									0.00	0.00		
T-6					0.14	0.63									0.00	0.01		
COMB-1	3.66	0.33	7.31	0.65	53.68	6.06	0.00	0.00	0.05	0.02	0.05	0.02	0.05	0.02	0.00	0.00		
LOAD					8.71	45.97												
FUG					0.76	3.34									0.00	0.00		
FUG2					0.76	3.34												
HAUL									0.11	0.39	0.11	0.39	0.01	0.04				
Totals	27.46	104.56	32.39	110.48	75.16	105.77	5.19	22.73	2.61	11.16	2.61	11.16	2.52	10.81	0.66	2.89		

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

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

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

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

Unit No.	NOx		CO		VOC		SOx		PM[2]		PM10[2]		PM2.5[2]		H_2S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
EP-1	666.97	6.56	3,040.58	29.91	2,138.96	16.54	0.00	0.00							0.00	0.00		
2/3-EP1	1,333.93	13.13	6,081.17	59.83	4,277.92	33.08	0.00	0.00							0.00	0.00		
4-EP-1	666.97	6.56	3,040.58	29.91	2,138.96	16.54	0.00	0.00							0.00	0.00		
SSM-misc					269.37	4.29												
SSMB					29.73	0.59												
Totals	2,667.87	26.25	12,162.33	119.65	8,854.93	71.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		

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

[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		X 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
EP-9	EP-9, EP-8	5.49	24.06	2.98	13.05	0.88	1.67	3.96	17.34	0.60	2.63	0.60	2.63	0.60	2.63	0.002	0.009
COMB-1	T1::T5	3.66	0.33	7.31	0.65	53.68	6.06	0.00	0.00	0.05	0.02	0.05	0.02	0.05	0.02	0.002	0.0002
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)			
EP-1	EP-1	V	No	100	1832	52			65.6	1.00
2/3-EP-1	2/3-EP-1	V	No	199	1832	104			65.6	1.00
4-EP-1	4-EP-1	V	No	100	1832	52			656	1.00
EP-2	EP-2	V	No	23	624	110			51.1	3.83
2-EP-2	2-EP-2	V	No	26	624	110			51.1	2.33
3-EP-2	3-EP-2	V	No	26	624	110			51.1	2.33
4-EP-2	4-EP-2	V	No	26	624	110			51.1	2.33
EP-3A	EP-3A	V	No	25	624	380			176.1	3.50
EP-3B	EP-3B	V	No	33	624	380			176.1	4.00
EP-4	EP-4	V	No	25	624	21			60	2.00
2-EP-4	2-EP-4	V	No	32	624	21			60	2.00
3-EP-4	3-EP-4	V	No	32	624	21			60	2.00
4-EP-4	4_EP-4	V	No	32	624	21			60	2.00
EP-5	EP-5	V	No	16	624	39			5.6	2.50
2-EP-5	2-EP-5	V	No	22	550	39			42.7	1.33
3-EP-5	3-EP-5	V	No	22	550	39			42.7	1.33
4-EP-5	4-EP-5	V	No	22	550	39			42.7	1.33
EP-6	EP-6	V	No	16	624	123			88.4	1.33
2-EP-6	2_EP-6	V	No	16	624	123			88.4	1.33
EP-9	EP-7, 2-EP-7, 3-EP-7, 4-EP-7, EP-8	V	No	76	1600	350			12.1	10.0
COMB-1	T-1::T-5	V	No	50	1500	708			18.4	7.00

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

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

Stack No.	Unit No.(s)	Total HAPs		Benzene X HAP or ☐ TAP		Toluene X HAP or ☐ TAP		Xylene X HAP or ☐ TAP		Hexane X HAP or ☐ TAP		2,2,4-Trimethylpentane X HAP or ☐ TAP		Ethylbenzene X 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
EP-2		0.001	0.01	0.000	0.000														
2-EP-2		0.001	0.01	0.000	0.000														
3-EP-2		0.001	0.01	0.000	0.000														
4-EP-2		0.001	0.01	0.000	0.000														
EP-3A		0.004	0.02	0.000	0.000														
EP-3B		0.004	0.02	0.000	0.000														
EP-4		0.0002	0.001	0.000	0.000														
2-EP-4		0.0002	0.001	0.000	0.000														
3-EP-4		0.0002	0.001	0.000	0.000														
4-EP-4		0.0002	0.001	0.000	0.000														
EP-5		0.0004	0.002	0.000	0.000														
2-EP-5		0.0004	0.002	0.000	0.000														
3-EP-5		0.0004	0.002	0.000	0.000														
4-EP-5		0.0004	0.002	0.000	0.000														
EP-6		0.001	0.01	0.000	0.000														
2-EP-6		0.001	0.01	0.000	0.000														
EP-7		0.03	0.15	0.093	0.101	0.01	0.05	0.000	0.000					0.000	0.000				
2-EP-7		0.03	0.15	0.023	0.101	0.01	0.05	0.000	0.000					0.000	0.000				
3-EP-7		0.03	0.15	0.023	0.101	0.01	0.05	0.000	0.000					0.000	0.000				
4-EP-7		0.03	0.15	0.023	0.101	0.01	0.05	0.000	0.000					0.000	0.000				
EP-8		0.09	0.40	0.02	0.07	0.01	0.04	0.003	0.01	0.03	0.15	0.000	0.000	0.003	0.013				
EP-9																			
EP-1		22.64	0.27	1.15	0.01	0.46	0.01	0.000	0.000	21.04	0.25	0.000	0.000	0.000	0.000				
2/3 EP-1		45.29	0.54	2.30	0.02	0.92	0.02	0.000	0.000	42.08	0.5	0.000	0.000	0.000	0.000				
4-EP-1		22.64	0.27	1.15	0.01	0.46	0.01	0.000	0.000	21.04	0.25	0.000	0.000	0.000	0.000				
T-1::T-5		0.19	0.85	0.01	0.04	0.002	0.01	0.0005	0.0021	0.18	0.78	0.003	0.02	0.0005	0.002				
T-6		0.005	0.02	0.004	0.02	0.001	0.004	0.0001	0.0004	0.0003	0.001	0.00001	0.0001	0.0001	0.001				
COMB-1		8.36	0.94	0.37	0.04	0.10	0.01	0.01	0.000	7.70	0.87	0.15	0.02	0.02	0.000				
LOAD		0.06	0.29	0.06	0.29														
FUG		0.02	0.10																
FUG2		0.02	0.10																
HAUL																			
SSM-misc																			
SSMB		0.12	0.002	0.117	0.002														
Totals:		99.6	4.4	5.3	0.9	2.0	0.3	0.0	0.0	92.1	2.8	0.2	0.0	0.0	0.0	-	-	-	-

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 (Scf)	Annual Usage (MMScf)	% Sulfur	% Ash
EP-1	Pipeline Quality Natural Gas	Residue Gas	1020	9,166,862.00	221.71	NA	NA
2/3-EP-1	Pipeline Quality Natural Gas	Residue Gas	1020	18,333,724.00	443.42	NA	NA
4-EP-1	Pipeline Quality Natural Gas	Residue Gas	1020	9,166,862.00	221.71	NA	NA
EP-2	Pipeline Quality Natural Gas	Residue Gas	1020	16,078.63	140.85	NA	NA
2-EP-2	Pipeline Quality Natural Gas	Residue Gas	1020	16,078.63	140.85	NA	NA
3-EP-2	Pipeline Quality Natural Gas	Residue Gas	1020	16,078.63	140.85	NA	NA
4-EP-2	Pipeline Quality Natural Gas	Residue Gas	1020	16,078.63	140.85	NA	NA
EP-3A	Pipeline Quality Natural Gas	Residue Gas	1020	55,443.55	485.69	NA	NA
EP-3B	Pipeline Quality Natural Gas	Residue Gas	1020	55,443.55	485.69	NA	NA
EP-4	Pipeline Quality Natural Gas	Residue Gas	1020	3,024.19	26.49	NA	NA
2-EP-4	Pipeline Quality Natural Gas	Residue Gas	1020	3,024.19	26.49	NA	NA
3-EP-4	Pipeline Quality Natural Gas	Residue Gas	1020	3,024.19	26.49	NA	NA
4-EP-4	Pipeline Quality Natural Gas	Residue Gas	1020	3,024.19	26.49	NA	NA
EP-5	Pipeline Quality Natural Gas	Residue Gas	1020	5,655.24	49.54	NA	NA
2-EP-5	Pipeline Quality Natural Gas	Residue Gas	1020	5,655.24	49.54	NA	NA
3-EP-5	Pipeline Quality Natural Gas	Residue Gas	1020	5,655.24	49.54	NA	NA
4-EP-5	Pipeline Quality Natural Gas	Residue Gas	1020	5,655.24	49.54	NA	NA
EP-6	Pipeline Quality Natural Gas	Residue Gas	1020	18,145.16	158.95	NA	NA
2-EP-6	Pipeline Quality Natural Gas	Residue Gas	1020	18,145.16	158.95	NA	NA
EP-9	Pipeline Quality Natural Gas	Residue Gas	1020	310,792.00	2,722.54	NA	NA
COMB-1	Pipeline Quality Natural Gas	Residue Gas	1020	4,361.88	0.85	NA	NA

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)
T-1	40400312	Condensate	Composition	7.1	50	80	4.0	80	5.3
T-2	40400312	Condensate	Composition	7.1	50	80	4.0	80	5.3
T-3	40400312	Condensate	Composition	7.1	50	80	4.0	80	5.3
T-4	40400312	Condensate	Composition	7.1	50	80	4.0	80	5.3
T-5	40400312	Condensate	Composition	7.1	50	80	4.0	80	5.3
T-6	40400312	Waste Water	Composition	8.3	27.3	63	0	63	0

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			
T-1	2017	Condensate	NA	FX	1,000	159.0	4.8	3.0	White	White	Good	24,528,000	730
T-2	2017	Condensate	NA	FX	1,000	159.0	4.8	3.0	White	White	Good	24,528,000	730
T-3	2017	Condensate	NA	FX	1,000	159.0	4.8	3.0	White	White	Good	24,528,000	730
T-4	2017	Condensate	NA	FX	1,000	159.0	4.8	3.0	White	White	Good	24,528,000	730
T-5	2017	Condensate	NA	FX	1,000	159.0	4.8	3.0	White	White	Good	24,528,000	730
T-6	2017	Waste Water	NA	FX	500	79.5	4.7		White	White	Good	1,076,040	64

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)**
Natural Gas	Natural Gas	Gas	880 mmscfd	Natural Gas	Natural Gas	Gas	880 mmscfd
				Condensate	Condensate	Liquid	8000 bpd
				Waste Water	Waste Water	Liquid	70 bpd

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. **NOT APPLICABLE**

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. **NOT APPLICABLE**

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**								
EP-2	**mass GHG**	8,172.07	0.02	0.15									8,172	
	CO_2e	8,172.07	4.59	3.85										8,181
2-EP-2	**mass GHG**	8,991.83	0.02	0.17									8,992	
	CO_2e	8,991.83	5.05	4.24										9,001
3-EP-2	**mass GHG**	8,991.83	0.02	0.17									8,992	
	CO_2e	8,991.83	5.05	4.24										9,001
4-EP-2	**mass GHG**	8,991.83	0.02	0.17									8,992	
	CO_2e	8,991.83	5.05	4.24										9,001
EP-3A	**mass GHG**	28,179.54	0.05	0.53									28,180	
	CO_2e	28,179.54	15.83	13.28										28,209
EP-3B	**mass GHG**	28,179.54	0.05	0.53									28,180	
	CO_2e	28,179.54	15.83	13.28										28,209
EP-4	**mass GHG**	1,537.07	0.00	0.03									1,537	
	CO_2e	1,537.07	0.86	0.72										1,539
2-EP-4	**mass GHG**	1,537.07	0.00	0.03									1,537	
	CO_2e	1,537.07	0.86	0.72										1,539
3-EP-4	**mass GHG**	1,537.07	0.00	0.03									1,537	
	CO_2e	1,537.07	0.86	0.72										1,539
4-EP-4	**mass GHG**	1,537.07	0.00	0.03									1,537	
	CO_2e	1,537.07	0.86	0.72										1,539
EP-5	**mass GHG**	2,874.31	0.01	0.05									2,874	
	CO_2e	2,874.31	1.61	1.35										2,877
2-EP-5	**mass GHG**	3,735.07	0.01	0.07									3,735	
	CO_2e	3,735.07	2.10	1.76										3,739
3-EP-5	**mass GHG**	3,735.07	0.01	0.07									3,735	
	CO_2e	3,735.07	2.10	1.76										3,739
4-EP-5	**mass GHG**	3,735.07	0.01	0.07									3,735	
	CO_2e	3,735.07	2.10	1.76										3,739
EP-6	**mass GHG**	9,222.39	0.02	0.17									9,223	
	CO_2e	9,222.39	5.18	4.35										9,232
2-EP-6	**mass GHG**	9,222.39	0.02	0.17									9,223	
	CO_2e	9,222.39	5.18	4.35										9,232
EP-7	**mass GHG**			0.00									0	
	CO_2e			0.00										0
2-EP-7	**mass GHG**			0.00									0	
	CO_2e			0.00										0

3-EP-7	**mass GHG**			0.00								0	
	CO_2e			0.00									0
4-EP-7	**mass GHG**			0.00								0	
	CO_2e			0.00									0
EP-8	**mass GHG**	60,585.82		0.00								60,586	
	CO_2e	60,585.82		0.04									60,586
EP-9	**mass GHG**	38,426.64	0.07	0.72								38,427	
	CO_2e	38,426.64	21.58	18.11									38,466
EP-1	**mass GHG**	13,574.26	0.03	60.38								13,635	
	CO_2e	13,574.26	7.79	1,509.48									15,092
2/3-EP-1	**mass GHG**	27,148.52	0.05	120.76								27,269	
	CO_2e	27,148.52	15.57	3,018.96									30,183
4-EP-1	**mass GHG**	13,574.26	0.03	60.38								13,635	
	CO_2e	13,574.26	7.79	1,509.48									15,092
COMB-1	**mass GHG**	271.94	0.00	0.33								272	
	CO_2e	271.94	0.04	8.26									280
FUG	**mass GHG**	0.13	0.00	29.23								29	
	CO_2e	0.13	0.00	730.70									731
FUG2	**mass GHG**	0.13	0.00	29.23								29	
	CO_2e	0.13	0.00	730.70									731
Total	**mass GHG**	283,760.90	0.42	303.48								284,065	0
	CO_2e	283,760.90	125.88	7,587.06								0	**291,474**

[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.

Lucid Energy Delaware, LLC (Lucid) owns and operates the Road Runner Gas Processing Plant located near Loving in Eddy County, NM. The most recent New Source Review (NSR) permit No. 7200-M2 was issued on November 28, 2018. Lucid is proposing a significant revision to its NSR Permit No. 7200-M2 to authorize a proposed expansion project to expand its current Road Runner Gas Processing Plant by adding two processing trains (processing trains 3 and 4).

The primary function of the Road Runner Gas Processing 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. The gas is treated to remove CO_2, H_2S, water and heavy (liquid) hydrocarbons from the gas stream.

The amine treater vent flows to a thermal oxidizer to remove volatile organic compound (VOC) and hazardous air pollutant (HAP) emissions. There will be minimal natural gas liquid storage options on location as the NGL's will be transported through a pipeline. NGL production will be optimized, which will limit the production of stable condensate.

Startup, shutdown and maintenance (SSM) emissions are included in this application. SSM emissions include blowdown events routed to the three proposed flares.

As discussed above, the expansion project will add two additional processing trains (trains 3 and 4) to the exiting trains 1 and 2; however, some design changes of the entire gas processing plant will also be implemented:

1. Only one Thermal Oxidizer is proposed, eliminating the second Thermal Oxidizer currently permitted
2. A total of three flares is proposed: one for train 1, one for train 2 and 3 (larger flare) and one for train 4
3. The processing capacity will increase from 160,600 MMScf/year to 321,200 MMScf/yr
4. No additional storage tanks are proposed and the existing tanks remain unchanged
5. Proposed SSM flare emissions will be based on actual SSM flare data from the current facility plus a safety factor of 25% per the pre-application meeting discussions. The currently permitted SSM flare emissions were over estimated

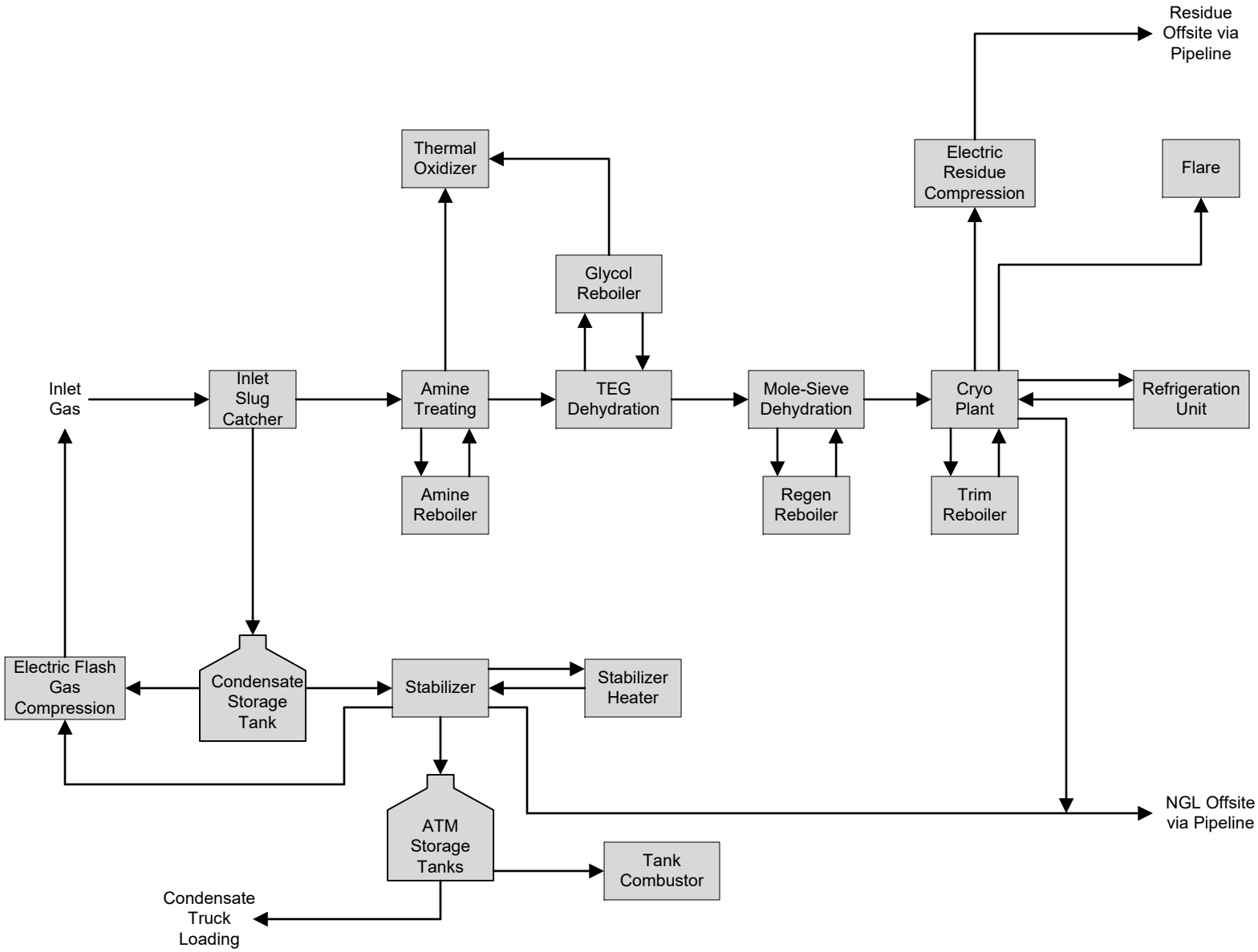
This expansion project will not trigger prevention of significant deterioration (PSD) review as the facility will stay below 250 tons per year (tpy) for any criteria pollutant.

Section 4

Process Flow Sheet

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

A process flow diagram is shown on the following page.



Note: 1 of 4 trains. Basic process is the same for each train.

ALLIANT ENVIRONMENTAL, LLC			**Process Flow Diagram**		**Lucid Energy Delaware, LLC**
Scale:	Drawn by: MDF	Date: 4/9/2020	**Roadrunner Gas Processing Plant**	Project No.: 097-002	File Name: **Roadrunner Figures** / Figure: Section 4
	Chk'd by:	Date:			

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.

An up-to-date plot plan is shown on the following page.

PROPERTY BOUNDRY

PROPERTY BOUNDRY

REFRIG. UNIT

CRYO/DEHY UNITS

AMINE UNIT

TEG IV

TEG II/III

STABILIZER UNIT

GAS TRAIN II/III/IV

R200'-0"

R100'-0"

R150'-0"

R100'-0"

R100'-0"

REFRIG. UNIT

NEED TO DISCUSS LOCATION

OFFICE

0+00'-0"
E. 1+00'-0"
E. 2+00'-0"
E. 3+00'-0"
E. 4+00'-0"
E. 5+00'-0"
E. 6+00'-0"
E. 7+00'-0"
E. 8+00'-0"
E. 9+00'-0"
E. 10+00'-0"
E. 11+00'-0"
E. 12+00'-0"
E. 13+00'-0"
E. 14+00'-0"
E. 15+00'-0"
E. 16+00'-0"
E. 17+00'-0"
E. 18+00'-0"

NOTES:

REVISED ISSUED

AUGUST 15 2017

FOR CONSTRUCTION

REFERENCE DRAWINGS

NO.	TITLE
D-10231-C03-101	PLOT PLAN EQUIPMENT LEGEND

REVISIONS

NO.	FIRM	DATE	DESCRIPTION	BY	CHK.	APP.
0	SI	07/27/17	ISSUED FOR CONSTRUCTION	SBO	JW	SH
1	SI	08/15/17	REVISED ADDED AMINE UNIT	JW	DLS	SH

SAULSBURY INDUSTRIES
ENGINEERING SERVICES
TEXAS REGISTERED ENGINEERING
FIRM F-518

ENGINEERING RECORD

PROJ. MANAGER:	S. SATTERWHITE	SI JOB NUMBER:	10231
PROJ. ENGR:	S. HENDERSON	AFE NUMBER:	
PROJ. DESIGN:	J. WARD	WELD CODE:	

LUCID energy group

ROAD RUNNER GAS PLANT
200 MMSCFD GAS PROCESSING FACILITY
PLOT PLAN

EDDY COUNTY, NEW MEXICO

PLOT SCALE: NONE	DWG. NO.	REV
FILE NAME: C03-100	D-10231-C03-100	1

J:\Lucid Energy\10231 Lucid Road Runner 200MM Cryo\03 ENGINEERING, DESIGN\3.4 Piping\3.4.3 Drawings - Plot Plans\C03-100 (8/15/2017 6:07:22 PM)

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, Reboilers

The facility will be equipped with several burners, heaters and reboilers of various heat input capacity. In accordance with standard NMED permitting procedures, external combustion equipment in boilers and heaters generate emissions of nitrogen oxides (NOx), carbon monoxide (CO), and volatile organic compounds (VOC).

Emissions from all burners except the amine reboilers (EP-3A, EP-3B, 2-EP-3A, and 2-EP-3B) are calculated based on AP-42 emission factors for natural gas combustion in small commercial burners. The burners will not be equipped with a catalytic converter or other emission control equipment. Therefore, uncontrolled and controlled emissions from this unit are equivalent.

NOx and CO emissions from the amine reboilers were calculated utilizing manufacturer emission factors corrected for 3% excess oxygen.

SSM Flares

The facility will be equipped with three (3) SSM flares. The emissions calculated for the pilot lights are exempt. In accordance with standard NMED permitting procedures, the flares generate emissions of nitrogen oxides (NOx), carbon monoxide (CO), and volatile organic compounds (VOC). Emissions from the flares are calculated based on AP-42 emission factors for industrial flares for NOx and CO. VOCs were calculated based on a mass balance approach.

SSM emissions (NOx, CO, and VOC) associated with the flares are based on actual SSM flare data collected at the Road Runner Gas Plant based on a 12-months rolling basis. Previously estimated and permitted SSM emissions proved to have been over estimated based on actual data collected. Therefore, it is proposed that the SSM annual (tpy) flare emission rates be based on actual data plus a 25% safety factor.

Condensate Storage Tanks (no changes to these emission units)

There are five 1,000 barrel stable condensate tanks permitted at this facility. The overhead stabilization system is in place to assist in increasing plant efficiencies of natural gas liquid (NGL) production and to lower the Reid Vapor Pressure (RVP) of the pipeline liquids and condensate after they are dropped out of the gas stream. Through a process that chills and compresses the gas from the inlet system, remaining vapors are separated off the refrigeration stream and are processed so the RVP is lowered to 9. Both the condensate from the refrigeration section of the plant and the liquids out of the slug catcher are combined, stabilized and sent to the tank farm for truck or pipeline sales. Any remaining vapors are recycled back to the front of the stabilization process. The liquid in the tank farm is then stable and thus does not give off significant vapors.

With an API gravity around 86 and an RVP of 9, there are no flashing emissions associated with these tanks. ProMax, using AP-42 factors, calculates working and standing losses of 109.16 tpy VOC. A combustor will be utilized to comply with NSPS Subpart OOOOa compliance. Loading losses are calculated at 45.97 tpy also using AP-42 methodology.

Amine Units

The amine aqueous mixture is regenerated via heat provided by the hot oil heaters. The “acid gas” is comprised primarily of the CO_2 and up to 12 parts per million (ppm) H_2S removed in the amine contactor. However, the amine can remove hydrocarbons. The vent stream was analyzed using the ProMax program. The three-phase separator has the potential to introduce a gaseous emissions stream. However, the gas phase will be routed back to the fuel system or the inlet of the plant and will not vent to the atmosphere.

The amine vent streams are primarily composed of CO_2, H_2S, and water. All amine vents will be routed to one (1) thermal oxidizer.

Glycol Dehydration Units

Emissions from the glycol recovery still consist of water vapor and various volatile organic compounds (VOC), including several hazardous air pollutants (HAPs). The vent stream from the glycol recovery still vents to atmosphere. The recovery still (regenerator) is considered a significant source operation. Maximum emissions from the glycol recovery still are calculated in accordance with department policy using the ProMax program.

The composition of the wet gas introduced to the glycol dehydration units was determined using appropriate analytical techniques and this information was entered into ProMax to calculate emissions from the glycol recovery still. A copy of the results of the gas analysis is provided in this section, along with a copy of the output report from the ProMax simulation. The glycol dehydration units are equipped with a flash tanks. The flash tanks off gases are routed to the fuel system or the plant inlet. These emissions are not vented to the atmosphere. All units are equipped with an individual aftermarket BTEX condenser. The non-condensable stream is also routed to the amine thermal oxidizer unit. The control device will achieve 99.9% control efficiency.

All units are subject to 40 CFR 63 Subpart HH. Provisions within HH were used to calculate the lean glycol recirculation rate. Calculation of the optimum glycol circulation rate determined in accordance with § 63.764(d)(2)(i).

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)

Combustion Sources

The facility will be equipped with several external combustion sources. The combustion sources result in CO_2, CH_4, and N_2O from combustion and will be calculated using Equation C-2a and Equation C-9a from Subpart C of 40 CFR 98.

Amine Vent Emissions

The amine vents emissions were calculated using a process stimulation as per Subpart W 40 CFR 98.

Startup, Shutdown, and Maintenance Emissions (SSM)

Startup, shutdown and maintenance emissions are gas streams that are flared. SSM emissions were calculated by estimating flaring events and times for the full volumes of the processing unit being served by the SSM flare. This constitutes the worst-case scenario and is highly unlikely.

Table 1

Emissions Summary
Roadrunner Gas Processing Plant
Eddy County
Lucid Energy Delware LLC

Controlled Emissions

		NO_X		CO		VOC		SO_2		TSP^2		$PM_{10}{}^2$		$PM_{2.5}{}^2$		H_2S		Total HAP		Benzene		CO_2	CH_4	N_2O	CO2e
Unit ID	Equipment Description	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	lb/hr	ton/yr	ton/yr	ton/yr	ton/yr	ton/yr
EP-2	Trim Reboiler	1.56	6.85	1.31	5.75	0.09	0.38	<0.01	<0.01	0.12	0.52	0.12	0.52	0.12	0.52	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	8,172.07	0.15	0.02	8,180.51
2-EP-2	Trim Reboiler	1.72	7.54	1.45	6.33	0.09	0.41	<0.01	<0.01	0.13	0.57	0.13	0.57	0.13	0.57	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	8,991.83	0.17	0.02	9,001.12
3-EP-2	Trim Reboiler	1.72	7.54	1.45	6.33	0.09	0.41	<0.01	<0.01	0.13	0.57	0.13	0.57	0.13	0.57	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	8,991.83	0.17	0.02	9,001.12
4-EP-2	Trim Reboiler	1.72	7.54	1.45	6.33	0.09	0.41	<0.01	<0.01	0.13	0.57	0.13	0.57	0.13	0.57	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	8,991.83	0.17	0.02	9,001.12
EP-3A	Amine Reboiler	1.74	7.63	3.54	15.48	0.30	1.30	<0.01	<0.01	0.41	1.79	0.41	1.79	0.41	1.79	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	28,179.54	0.53	0.05	28,208.64
EP-3B	Amine Reboiler	1.74	7.63	3.54	15.48	0.30	1.30	<0.01	<0.01	0.41	1.79	0.41	1.79	0.41	1.79	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	28,179.54	0.53	0.05	28,208.64
EP-4	Glycol Reboiler	0.29	1.29	0.25	1.08	0.02	0.07	<0.01	<0.01	0.02	0.10	0.02	0.10	0.02	0.10	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	1,537.07	0.03	<0.01	1,538.65
2-EP-4	Glycol Reboiler	0.29	1.29	0.25	1.08	0.02	0.07	<0.01	<0.01	0.02	0.10	0.02	0.10	0.02	0.10	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	1,537.07	0.03	<0.01	1,538.65
3-EP-4	Glycol Reboiler	0.29	1.29	0.25	1.08	0.02	0.07	<0.01	<0.01	0.02	0.10	0.02	0.10	0.02	0.10	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	1,537.07	0.03	<0.01	1,538.65
4-EP-4	Glycol Reboiler	0.29	1.29	0.25	1.08	0.02	0.07	<0.01	<0.01	0.02	0.10	0.02	0.10	0.02	0.10	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	1,537.07	0.03	<0.01	1,538.65
EP-5	Regen Reboiler	0.55	2.41	0.46	2.02	0.03	0.13	<0.01	<0.01	0.04	0.18	0.04	0.18	0.04	0.18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	2,874.31	0.05	<0.01	2,877.28
2-EP-5	Regen Reboiler	0.71	3.13	0.60	2.63	0.04	0.17	<0.01	<0.01	0.04	0.18	0.04	0.18	0.04	0.18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	3,735.07	0.07	<0.01	3,738.93
3-EP-5	Regen Reboiler	0.71	3.13	0.60	2.63	0.04	0.17	<0.01	<0.01	0.04	0.18	0.04	0.18	0.04	0.18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	3,735.07	0.07	<0.01	3,738.93
4-EP-5	Regen Reboiler	0.71	3.13	0.60	2.63	0.04	0.17	<0.01	<0.01	0.04	0.18	0.04	0.18	0.04	0.18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	3,735.07	0.07	<0.01	3,738.93
EP-6	Stabilizer Heater	1.76	7.73	1.48	6.49	0.10	0.43	<0.01	<0.01	0.13	0.59	0.13	0.59	0.13	0.59	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	9,222.39	0.17	0.02	9,231.92
2-EP-6	Stabilizer Heater	1.76	7.73	1.48	6.49	0.10	0.43	<0.01	<0.01	0.13	0.59	0.13	0.59	0.13	0.59	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	9,222.39	0.17	0.02	9,231.92
EP-7	Glycol Dehydrator (99.9% Control)					0.12	0.54									<0.01	<0.01	0.03	0.15	0.09	0.10		<0.01		<0.01
2-EP-7	Glycol Dehydrator (99.9% Control)					0.12	0.54									<0.01	<0.01	0.03	0.15	0.02	0.10		<0.01		<0.01
3-EP-7	Glycol Dehydrator (99.9% Control)					0.12	0.54									<0.01	<0.01	0.03	0.15	0.02	0.10		<0.01		<0.01
4-EP-7	Glycol Dehydrator (99.9% Control)					0.12	0.54									<0.01	<0.01	0.03	0.15	0.02	0.10		<0.01		<0.01
EP-8	Amine Vent					0.38	1.67											0.09	0.40	0.02	0.07	60,585.82	<0.01		60,585.86
EP-9	Thermal Oxidizer	5.49	24.06	2.98	13.05	0.88	1.67	3.96	17.34	0.60	2.63	0.60	2.63	0.60	2.63	<0.01	<0.01					38,426.64	0.72	0.07	38,466.33
EP-1	Flare (SSM)	667.14	7.32	3,041.37	33.37	2,140.64	23.91	0.31	1.35							0.16	0.72	22.64	0.27			13,574.26	60.38	0.03	15,091.53
2/3-EP-1	Flare (SSM)	1,334.28	14.64	6,082.75	66.75	4,281.28	47.82	0.61	2.69							0.33	1.43	45.29	0.54			27,148.52	120.76	0.05	30,183.06
4-EP-1	Flare (SSM)	667.14	7.32	3,041.37	33.37	2,140.64	23.91	0.31	1.35							0.16	0.72	22.64	0.27			13,574.26	60.38	0.03	15,091.53
T-1::T-5	Condensate Storage Tank (95% Control)					1.25	5.46									<0.01	<0.01	0.19	0.85	<0.01	0.04				
T-6	Waste Water Tank					0.14	0.63									<0.01	<0.01	<0.01	0.02	<0.01	0.02				
COMB-1	Tank Combustor	3.66	0.33	7.31	0.65	53.68	6.06	<0.01	<0.01	0.05	0.02	0.05	0.02	0.05	0.02	<0.01	<0.01	8.36	0.94	0.37	0.04	271.94	0.33	<0.01	280.24
LOAD	Loading Emissions					8.71	45.97											0.06	0.29	0.06	0.29				
FUG	Fugitive Emissions					0.76	3.34									<0.01	<0.01	0.02	0.10			0.13	29.23	<0.01	730.82
FUG2	Fugitive Emissions					0.76	3.34									<0.01	<0.01	0.02	0.10			0.13	29.23	<0.01	730.82
HAUL	Haul									0.41	1.51	0.11	0.39	0.01	0.04										
MSSM	MSS Miscellaneous					269.37	4.29																		
MSSB	MSS Blowdowns					29.73	0.59											0.12	<0.01	0.12	<0.01				
Totals		**2,695.33**	**130.81**	**12,194.72**	**230.14**	**8,930.09**	**176.81**	**5.19**	**22.72**	**2.92**	**12.29**	**2.61**	**11.16**	**2.52**	**10.81**	**0.66**	**2.88**	**99.60**	**4.48**	**0.74**	**0.87**	**283,760.90**	**303.48**	**0.42**	**291,473.84**

Table 1

Emissions Summary
Roadrunner Gas Processing Plant
Eddy County
Lucid Energy Delware LLC

Uncontrolled Emissions

		NO_X		CO		VOC		SO_2		TSP^2		$PM_{10}{}^2$		$PM_{2.5}{}^2$		H_2S		Total HAP		Benzene		CO_2	CH_4	N_2O	CO2e
Unit ID	Equipment Description	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	lb/hr	ton/yr	ton/yr	ton/yr	ton/yr	ton/yr
EP-2	Trim Reboiler	1.56	6.85	1.31	5.75	0.09	0.38	<0.01	<0.01	0.12	0.52	0.12	0.52	0.12	0.52	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	8,172.07	0.15	0.02	8,180.51
2-EP-2	Trim Reboiler	1.72	7.54	1.45	6.33	0.09	0.41	<0.01	<0.01	0.13	0.57	0.13	0.57	0.13	0.57	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	8,991.83	0.17	0.02	8,180.51
3-EP-2	Trim Reboiler	1.72	7.54	1.45	6.33	0.09	0.41	<0.01	<0.01	0.13	0.57	0.13	0.57	0.13	0.57	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	8,991.83	0.17	0.02	8,180.51
4-EP-2	Trim Reboiler	1.72	7.54	1.45	6.33	0.09	0.41	<0.01	<0.01	0.13	0.57	0.13	0.57	0.13	0.57	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	8,991.83	0.17	0.02	8,180.51
EP-3A	Amine Reboiler	1.74	7.63	3.54	15.48	0.30	1.30	<0.01	<0.01	0.41	1.79	0.41	1.79	0.41	1.79	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	28,179.54	0.53	0.05	28,208.64
EP-3B	Amine Reboiler	1.74	7.63	3.54	15.48	0.30	1.30	<0.01	<0.01	0.41	1.79	0.41	1.79	0.41	1.79	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	28,179.54	0.53	0.05	28,208.64
EP-4	Glycol Reboiler	0.29	1.29	0.25	1.08	0.02	0.07	<0.01	<0.01	0.02	0.10	0.02	0.10	0.02	0.10	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	1,537.07	0.03	<0.01	1,538.65
2-EP-4	Glycol Reboiler	0.29	1.29	0.25	1.08	0.02	0.07	<0.01	<0.01	0.02	0.10	0.02	0.10	0.02	0.10	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	1,537.07	0.03	<0.01	1,538.65
3-EP-4	Glycol Reboiler	0.29	1.29	0.25	1.08	0.02	0.07	<0.01	<0.01	0.02	0.10	0.02	0.10	0.02	0.10	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	1,537.07	0.03	<0.01	1,538.65
4-EP-4	Glycol Reboiler	0.29	1.29	0.25	1.08	0.02	0.07	<0.01	<0.01	0.02	0.10	0.02	0.10	0.02	0.10	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	1,537.07	0.03	<0.01	1,538.65
EP-5	Regen Reboiler	0.55	2.41	0.46	2.02	0.03	0.13	<0.01	<0.01	0.04	0.18	0.04	0.18	0.04	0.18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	2,874.31	0.05	<0.01	2,877.28
2-EP-5	Regen Reboiler	0.71	3.13	0.60	2.63	0.04	0.17	<0.01	<0.01	0.04	0.18	0.04	0.18	0.04	0.18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	3,735.07	0.07	<0.01	3,738.93
3-EP-5	Regen Reboiler	0.71	3.13	0.60	2.63	0.04	0.17	<0.01	<0.01	0.04	0.18	0.04	0.18	0.04	0.18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	3,735.07	0.07	<0.01	3,738.93
4-EP-5	Regen Reboiler	0.71	3.13	0.60	2.63	0.04	0.17	<0.01	<0.01	0.04	0.18	0.04	0.18	0.04	0.18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	3,735.07	0.07	<0.01	3,738.93
EP-6	Stabilizer Heater	1.76	7.73	1.48	6.49	0.10	0.43	<0.01	<0.01	0.13	0.59	0.13	0.59	0.13	0.59	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	9,222.39	0.17	0.02	9,231.92
2-EP-6	Stabilizer Heater	1.76	7.73	1.48	6.49	0.10	0.43	<0.01	<0.01	0.13	0.59	0.13	0.59	0.13	0.59	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	9,222.39	0.17	0.02	9,231.92
EP-7	Glycol Dehydrator (99.9% Control)					123.77	542.13											34.27	150.12	23.16	101.43		18.39		459.67
2-EP-7	Glycol Dehydrator (99.9% Control)					123.77	542.13											34.27	150.12	23.16	101.43		18.39		459.67
3-EP-7	Glycol Dehydrator (99.9% Control)					123.77	542.13											34.27	150.12	23.16	101.43		18.39		459.67
4-EP-7	Glycol Dehydrator (99.9% Control)					123.77	542.13											34.27	150.12	23.16	101.43		18.39		459.67
EP-8	Amine Vent (99.9% Control)					380.65	1,667.23	<0.01	<0.01							2.11	9.22	92.21	403.88	16.97	74.34	60,585.82	327.55	<0.01	68,774.47
EP-9	Thermal Oxidizer	No emissions from this unit in an uncontrolled scenario																							
EP-1	Flare (Pilot and Purge)	0.17	0.76	0.79	3.46	1.68	7.37	0.31	1.35							<0.01	0.01								
2/3 EP-1	Flare (Pilot and Purge)	0.35	1.52	1.58	6.92	3.37	14.74	0.61	2.69							<0.01	0.03								
4-EP-1	Flare (Pilot and Purge)	0.17	0.76	0.79	3.46	1.68	7.37	0.31	1.35							<0.01	0.01								
T-1::T-5	Condensate Storage Tank (95% Control)					24.92	109.16											3.88	17.00						
T-6	Waste Water Tank					0.14	0.63									<0.01	<0.01	<0.01	0.02						
COMB-1	Tank Combustor					-	-															271.94	0.33	<0.01	280.24
LOAD	Loading Emissions					8.71	45.97											0.06	0.29	0.06	0.29				
FUG	Fugitive Emissions					2.80	12.25									<0.01	<0.01	0.08	0.36	<0.01	<0.01	0.13	29.23	<0.01	730.82
FUG2	Fugitive Emissions					2.80	12.25																		
HAUL	Haul					-	-			0.41	1.51	0.11	0.39	0.01	0.04										
MSSM	MSS Miscellaneous					269.37	4.29																		
MSSB	MSS Blowdowns					594.56	11.89											1.17	0.01	2.34	0.05				
Totals		**18.30**	**80.17**	**22.10**	**96.79**	**1,787.14**	**4,067.68**	**1.23**	**5.38**	**2.27**	**9.64**	**1.96**	**8.51**	**1.87**	**8.17**	**2.12**	**9.29**	**234.52**	**1,022.13**	**112.00**	**480.41**	**191,037.09**	**433.11**	**0.25**	**199,476.03**

Table 2

Natural Gas Combustion Emissions
Roadrunner Gas Processing Plant
Eddy County
Lucid Energy Delware LLC

EP-2 Emissions Calculations (fueled by natural gas)

Heater/Boiler rating (MMBtu/hr):	15.95
Rating above is **(select from list)**:	*below 100 MMBtu/hr, uncontrolled*
Operating hours/year:	8760
Fuel Heat Value, LHV (Btu/SCF):	1020.0

(assume uncontrolled, unless specifically stated otherwise)

pollutant	emission factor (lb/MMCF)	lb/hr	tpy
VOC	5.5	0.086	0.377
NOx	**100**	1.564	6.849
CO	84	1.314	5.753
PM	7.6	0.119	0.521
Benzene	2.10E-03	0.000	0.000
Toluene	3.40E-03	0.000	0.000
Formaldehyde	7.50E-02	0.001	0.005
SO_2	0	0.000	0.000

If the heater/boiler is fueled by Sour Gas, <u>cannot</u> use emission factors above to calculate SO_2 emissions, must use SO_2 mass balance:

SO_2 Mass Balance calculation:	
Fuel H_2S content (mol %) =	**0.0000**
SO_2 produced (lb/hr) =	**0.0000**
SO_2 produced (tpy) =	**0.0000**

assumptions:

SO2 MW	64.06	lb/lb-mole
Ideal Gas Law	378.61	SCF/lb-mole

Table 2

Natural Gas Combustion Emissions
Roadrunner Gas Processing Plant
Eddy County
Lucid Energy Delware LLC

2-EP-2, 3-EP-2 and 4-EP-2 Emissions Calculations (fueled by natural gas)

Heater/Boiler rating (MMBtu/hr):	17.55
Rating above is **(select from list)**:	*below 100 MMBtu/hr, uncontrolled*
Operating hours/year:	8760
Fuel Heat Value, LHV (Btu/SCF):	1020.0

(assume uncontrolled, unless specifically stated otherwise)

pollutant	emission factor (lb/MMCF)	lb/hr	tpy
VOC	5.5	0.095	0.414
NOx	**100**	1.721	7.536
CO	84	1.445	6.330
PM	7.6	0.131	0.573
Benzene	2.10E-03	0.000	0.000
Toluene	3.40E-03	0.000	0.000
Formaldehyde	7.50E-02	0.001	0.005
SO_2	0	0.000	0.000

If the heater/boiler is fueled by Sour Gas, cannot use emission factors above to calculate SO_2 emissions, must use SO_2 mass balance:

SO_2 Mass Balance calculation:	
Fuel H_2S content (mol %) =	**0.0000**
SO_2 produced (lb/hr) =	**0.0000**
SO_2 produced (tpy) =	**0.0000**

assumptions:		
SO2 MW	64.06	lb/lb-mole
Ideal Gas Law	378.61	SCF/lb-mole

Table 2

Natural Gas Combustion Emissions
Roadrunner Gas Processing Plant
Eddy County
Lucid Energy Delware LLC

EP-3A, EP-3B Emissions Calculations (fueled by natural gas)

Heater/Boiler rating (MMBtu/hr):	55
Flow Rate (dscfm):	7984.17
Rating above is **(select from list)**:	*below 100 MMBtu/hr, uncontrolled*
Operating hours/year:	8760
Fuel Heat Value, LHV (Btu/SCF):	1020.0

(assume uncontrolled, unless specifically stated otherwise)

pollutant	emission factor (lb/MMCF)	emission factor (ppmv)	lb/hr	tpy
VOC	5.5		0.297	1.299
NOx[1]	-	**30**	1.742	7.631
CO[1]	-	100	3.535	15.484
PM	7.6		0.410	1.795
Benzene	2.10E-03		0.000	0.000
Toluene	3.40E-03		0.000	0.001
Formaldehyde	7.50E-02		0.004	0.018
SO_2	0		0.000	0.000

If the heater/boiler is fueled by Sour Gas, <u>cannot</u> use emission factors above to calculate SO_2 emissions, must use SO_2 mass balance:

SO_2 Mass Balance calculation:	
Fuel H_2S content (mol %) =	**0.0000**
SO_2 produced (lb/hr) =	**0.0000**
SO_2 produced (tpy) =	**0.0000**

calculation factors		
SO2 MW	64.06	lb/lb-mole
NO2 MW	46	lb/lb-mole
CO MW	28	lb/lb-mole
Ideal Gas Law	379.43	SCF/lb-mole
F_d[2]	8710	dscf/MMBtu

[1] Manufacturer specific emission factors per Devco corrected for 3% O_2

[2] Factor per 40 CFR 40 Appx A Method 19 Table 19-2

Table 2

Natural Gas Combustion Emissions
Roadrunner Gas Processing Plant
Eddy County
Lucid Energy Delware LLC

EP-4 Emissions Calculations (fueled by natural gas)

Heater/Boiler rating (MMBtu/hr):	3.00	
Rating above is **(select from list)**:	*below 100 MMBtu/hr, uncontrolled*	(assume uncontrolled, unless specifically stated otherwise)
Operating hours/year:	8760	
Fuel Heat Value, LHV (Btu/SCF):	1020.0	

pollutant	emission factor (lb/MMCF)	lb/hr	tpy
VOC	5.5	0.016	0.071
NOx	**100**	0.294	1.288
CO	84	0.247	1.082
PM	7.6	0.022	0.098
Benzene	2.10E-03	0.000	0.000
Toluene	3.40E-03	0.000	0.000
Formaldehyde	7.50E-02	0.000	0.001
SO_2	0	0.000	0.000

If the heater/boiler is fueled by Sour Gas, <u>cannot</u> use emission factors above to calculate SO_2 emissions, must use SO_2 mass balance:

SO_2 Mass Balance calculation:	
Fuel H_2S content (mol %) =	**0.0000**
SO_2 produced (lb/hr) =	**0.0000**
SO_2 produced (tpy) =	**0.0000**

assumptions:		
SO2 MW	64.06	lb/lb-mole
Ideal Gas Law	378.61	SCF/lb-mole

Table 2

Natural Gas Combustion Emissions
Roadrunner Gas Processing Plant
Eddy County
Lucid Energy Delware LLC

2-EP-4, 3-EP-4, and 4-EP-4 Emissions Calculations (fueled by natural gas)

Heater/Boiler rating (MMBtu/hr):	3.00	
Rating above is **(select from list)**:	*below 100 MMBtu/hr, uncontrolled*	(assume uncontrolled, unless specifically stated otherwise)
Operating hours/year:	8760	
Fuel Heat Value, LHV (Btu/SCF):	1020.0	

pollutant	emission factor (lb/MMCF)	lb/hr	tpy
VOC	5.5	0.016	0.071
NOx	**100**	0.294	1.288
CO	84	0.247	1.082
PM	7.6	0.022	0.098
Benzene	2.10E-03	0.000	0.000
Toluene	3.40E-03	0.000	0.000
Formaldehyde	7.50E-02	0.000	0.001
SO_2	0	0.000	0.000

If the heater/boiler is fueled by Sour Gas, <u>cannot</u> use emission factors above to calculate SO_2 emissions, must use SO_2 mass balance:

SO_2 Mass Balance calculation:	
Fuel H_2S content (mol %) =	**0.0000**
SO_2 produced (lb/hr) =	**0.0000**
SO_2 produced (tpy) =	**0.0000**

assumptions:		
SO2 MW	64.06	lb/lb-mole
Ideal Gas Law	378.61	SCF/lb-mole

Table 2

Natural Gas Combustion Emissions
Roadrunner Gas Processing Plant
Eddy County
Lucid Energy Delware LLC

EP-5 Emissions Calculations (fueled by natural gas)

Heater/Boiler rating (MMBtu/hr):	5.61	
Rating above is **(select from list)**:	*below 100 MMBtu/hr, uncontrolled*	(assume uncontrolled, unless specifically stated otherwise)
Operating hours/year:	8760	
Fuel Heat Value, LHV (Btu/SCF):	1020.0	

pollutant	emission factor (lb/MMCF)	lb/hr	tpy
VOC	5.5	0.030	0.132
NOx	**100**	0.550	2.409
CO	84	0.462	2.024
PM	7.6	0.042	0.183
Benzene	2.10E-03	0.000	0.000
Toluene	3.40E-03	0.000	0.000
Formaldehyde	7.50E-02	0.000	0.002
SO_2	0	0.000	0.000

If the heater/boiler is fueled by Sour Gas, <u>cannot</u> use emission factors above to calculate SO_2 emissions, must use SO_2 mass balance:

SO_2 Mass Balance calculation:	
Fuel H_2S content (mol %) =	**0.0004**
SO_2 produced (lb/hr) =	**0.0037**
SO_2 produced (tpy) =	**0.0163**

assumptions:		
SO2 MW	64.06	lb/lb-mole
Ideal Gas Law	378.61	SCF/lb-mole

Table 2

Natural Gas Combustion Emissions
Roadrunner Gas Processing Plant
Eddy County
Lucid Energy Delware LLC

2-EP-5, 3-EP-5, and 4-EP-5 Emissions Calculations (fueled by natural gas)

Heater/Boiler rating (MMBtu/hr):	7.29
Rating above is **(select from list)**:	*below 100 MMBtu/hr, uncontrolled*
Operating hours/year:	8760
Fuel Heat Value, LHV (Btu/SCF):	1020.0

(assume uncontrolled, unless specifically stated otherwise)

pollutant	emission factor (lb/MMCF)	lb/hr	tpy
VOC	5.5	0.039	0.172
NOx	**100**	0.715	3.130
CO	84	0.600	2.630
PM	7.6	0.042	0.183
Benzene	2.10E-03	0.000	0.000
Toluene	3.40E-03	0.000	0.000
Formaldehyde	7.50E-02	0.000	0.002
SO_2	0	0.000	0.000

If the heater/boiler is fueled by Sour Gas, <u>cannot</u> use emission factors above to calculate SO_2 emissions, must use SO_2 mass balance:

SO_2 Mass Balance calculation:	
Fuel H_2S content (mol %) =	**0.0004**
SO_2 produced (lb/hr) =	**0.0048**
SO_2 produced (tpy) =	**0.0212**

assumptions:		
SO2 MW	64.06	lb/lb-mole
Ideal Gas Law	378.61	SCF/lb-mole

Table 2

Natural Gas Combustion Emissions
Roadrunner Gas Processing Plant
Eddy County
Lucid Energy Delware LLC

EP-6 and 2-EP-6 Emissions Calculations (fueled by natural gas)

Heater/Boiler rating (MMBtu/hr):	18	
Rating above is **(select from list)**:	*below 100 MMBtu/hr, uncontrolled*	(assume uncontrolled, unless specifically stated otherwise)
Operating hours/year:	8760	
Fuel Heat Value, LHV (Btu/SCF):	1020.0	

pollutant	emission factor (lb/MMCF)	lb/hr	tpy
VOC	5.5	0.097	0.425
NOx	**100**	1.765	7.729
CO	84	1.482	6.493
PM	7.6	0.134	0.587
Benzene	2.10E-03	0.000	0.000
Toluene	3.40E-03	0.000	0.000
Formaldehyde	7.50E-02	0.001	0.005
SO_2	0	0.000	0.000

If the heater/boiler is fueled by Sour Gas, <u>cannot</u> use emission factors above to calculate SO_2 emissions, must use SO_2 mass balance:

SO_2 Mass Balance calculation:	
Fuel H_2S content (mol %) =	**0.0000**
SO_2 produced (lb/hr) =	**0.0000**
SO_2 produced (tpy) =	**0.0000**

assumptions:		
SO2 MW	64.06	lb/lb-mole
Ideal Gas Law	378.61	SCF/lb-mole

Table 3

Glycol Dehydrator Emissions
Roadrunner Gas Processing Plant
Eddy County
Lucid Energy Delware LLC

Emission Unit: **EP-7, 2-EP-7, 3-EP-7, and 4-EP-7**

Source Description: TEG Dehydrator emissions

TEG Dehydrator controlled by thermal oxidizer unit EP-9

TEG Dehydrator controlled emissions exit via stack EP-9 but are listed as EP-7, 2-EP-7, 3-EP-7, and 4-EP-7 emisision unit emissions

Thermal Oxidizer Control Efficiency	99.9%

	VOC		H_2S		Total HAP		Benzene		Toluene		Ethylbenzene		Xylene		Methane	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Uncontrolled Emissions from ProMax	495.10	2168.52	1.81E-04	7.92E-04	137.10	600.48	92.63	405.72	44.47	194.76	0.00	0.00	0.00	0.00	16.79	73.55
TOTAL Controlled Emissions	0.50	2.17	0.00	0.00	0.14	0.60	0.09	0.41	0.04	0.19	0.00	0.00	0.00	0.00	8.40E-05	3.68E-04
Uncontrolled Emissions Per Unit	123.77	542.13	4.52E-05	1.98E-04	34.27	150.12	23.16	101.43	11.12	48.69	0.00	0.00	0.00	0.00	4.20	18.39
Controlled Emissions Per Unit	0.12	0.54	4.52E-08	1.98E-07	0.03	0.15	0.02	0.10	0.01	0.05	0.00	0.00	0.00	0.00	2.10E-05	9.19E-05

Note: Controlled methane based on 99.9995% destruction (based on 0.001 kg/MMBtu emission EF in 40 CFR Part 98).

Emissions estimated using ProMax, "Inlet Gas Amine Tre…PStr (1)", column E, starting at row 235 (propane).

Table 4

Amine Vent Emissions
Roadrunner Gas Processing Plant
Eddy County
Lucid Energy Delware LLC

Emission Unit: EP-8

Source Description: Amine vent controlled by thermal oxidizer unit EP-9

Controlled emissions exit via stack EP-9 but are listed as EP-8 emisision unit emissions except for SO2 and H2S

Thermal Oxidizer Control Efficiency	99.9%

	Uncontrolled		Controlled	
Components	**EP-8 Amine Vent (lb/hr)**	**EP-8 Amine Vent (ton/yr)**	**EP-8 Amine Vent (lb/hr)**	**EP-8 Amine Vent (ton/yr)**
Carbon Dioxide	13,832	60,586	13,832	60,586
Hydrogen Sulfide	2.11	9.22	**0.002**	**0.01**
Sulfur Dioxide	-	-	**3.96**	**17.34**
Nitrogen	0.21	0.90	0.21	0.90
Methane	74.78	327.55	3.74E-04	1.64E-03
Ethane	96.98	424.76	0.10	0.42
Propane	104.34	457.03	0.10	0.46
Isobutane	17.93	78.52	0.02	0.08
n-Butane	71.44	312.91	0.07	0.31
Isopentane	25.89	113.42	0.03	0.11
n-Pentane	33.27	145.73	0.03	0.15
n-Hexane	60.00	262.79	0.06	0.26
Heptane	34.89	152.83	0.03	0.15
Cyclopentane	0.00	0.00	0.00	0.00
Benzene	16.97	74.34	0.02	0.07
Cyclohexane	0.54	2.38	<0.01	<0.01
Methylcyclohexane	0.12	0.52	<0.01	<0.01
2,2,4-Trimethylpentane	1.01E-03	4.40E-03	<0.01	<0.01
Toluene	9.43	41.29	0.01	0.04
Ethylbenzene	2.92	12.80	<0.01	0.01
Xylenes	2.89	12.65	<0.01	0.01
Octane	0.0040	0.02	<0.01	<0.01
MDEA	5.23E-05	2.29E-04	<0.01	<0.01
Piperazine	4.57E-05	2.00E-04	<0.01	<0.01
TEG	2.92E-12	1.28E-11	0.00	0.00
TOTALS:	**14,387**	**63,015**	**13837.02**	**60606.16**
TOTAL VOCs:	**380.65**	**1667.23**	**0.38**	**1.67**
TOTAL HAPs:	**92.21**	**403.88**	**0.09**	**0.40**

Molecular Weights	**lb/lb-mol**
Carbon Dioxide	44.01
Hydrogen Sulfide	34.08
Sulfur Dioxide	64.07
Nitrogen	28.01
Methane	16.04
Ethane	30.07
Propane	44.10
Isobutane	58.12
n-Butane	58.12
Isopentane	72.15
n-Pentane	72.15
n-Hexane	86.18
Heptane	100.21
Cyclopentane	70.10
Benzene	78.11
Cyclohexane	84.16
Methylcyclohexane	98.19
2,2,4-Trimethylpentane	114.23
Toluene	92.14
Ethylbenzene	106.17
Xylenes	106.16
Octane	114.23
MDEA	119.16
Piperazine	86.14
TEG	150.17

Notes:

Uncontrolled emissions calculated from Promax output data of molar fraction, total molar flow and MW.
Controlled methane based on 99.9995% destruction (based on 0.001kg/MMBtu emission EF in 40 CFR Part 98)
Controlled H_2S emissions assume conversion to SO_2 based on control efficiency.
Controlled SO_2 emissions assumed 100% conversion of H_2S to SO_2.

Table 5

Thermal Oxidizer Emissions (EP-9)
Roadrunner Gas Processing Plant
Eddy County
Lucid Energy Delaware LLC

General Information

Flare functions as emergency control device. When streams are fed to flare it will be treated as an emission event.

(1) Flare Name:	TO 1	
(2) Flare EPN:	EP-9	
(3) What kind of device is this? Pick from list.	Thermal Oxidizer	
	Emission Factors for Waste Gas Stream(s) (ppmv)	
	NOx	50
	CO	40
(4) Is there one or more pilot streams fired with pipeline quality natural gas or propane? Pick Yes or No. Follow instructions below.	No	
	Please move on to next question below.	
	Emission Factors for Pilot Stream (lb/MMscf)	
	NOx	0
	CO	0
(5) Is there one or more pilot streams fired with field gas? Pick Yes or No. Follow instructions below.	No	
	Please move on to next question below.	
	Emission Factors for Pilot Stream (ppmv)	
	NOx	0
	CO	0
(6) Is there an added fuel stream made up of pipeline quality natural gas or propane? Pick Yes or No. Follow instructions below.	Yes	
	Enter added fuel stream information into the boxes in the column for Steam No. 2 below.	
	Emission Factors for Added Fuel Stream (ppmv)	
	NOx	
	CO	
(7) Is there an added fuel stream made up of field gas? Pick Yes or No. Follow instructions below.	No	
	Please move on to next question below.	
	Emission Factors for Added Fuel Stream (lb/MMBtu)	
	NOx	0
	CO	0
(8) VOC percent destruction efficiency (%)	99.9	
(9) propane percent destruction efficiency (%) *OPTIONAL*		
(10) H_2S percent destruction efficiency (%)	99.9	

Emission Factors

[2]Emission Factors from Zeeco Guarantee (lb/MMBtu)

PM (Total)	0.008	lb/MMBtu

[1]Manufacturers Guaranteed Outlet Concentration

Pollutant	(ppmv)
NOx	50
CO	40

calculation factors:

NO2 MW	41.3	lb/lb-mole
CO MW	28	lb/lb-mole
Ideal Gas Law	379.43	SCF/lb-mole

Exhaust Stream per Zeeco Guarantee

Component	lb/hr	lb/lbmol	lbmol/hr	L/hr	vol%
CO2	33421	44	759.57	32,349,756	32%
H2O	7086.1	18	393.67	16,766,369	17%
N2	31261.58	28	1110.93	47,314,154	47%
SO2	15.47	64	0.24	10,283	0.0102%
O2	3158.75	32	98.7109375	4,204,066	4.1771%
					100%

Supplemental Fuel Gas per Zeeco Guarantee	**30**	**MMBtu/hr**
Maximum Heating Value per Zeeco Guarantee	**75**	**MMBtu/hr**

PV=nRT

T=	1600	F	1,144	K
n=	2,363	lbmol/hr	1,071,889	gmol/hr
P=	1	atm	29.92	in Hg
R=	0.082057	atm-L/mol-K		
V	100,644,628	L/hr	3,554,212	ft3/hr
T (act)	1600	F	2059.67	R
T (std)			327.67	R
V (std)			759,040	dscfh
V (std)			12,651	dscfm
Safety Factor			**1.33**	
V (std) with safety factor			**1,009,523**	**dscfh**

Emission Factors from AP-42 Table 1.4-3 (lb/MMscf)

SO_2	0.6
VOC	5.5
benzene	2.10E-03
propane	1.60

Table 5

Thermal Oxidizer Emissions (EP-9)
Roadrunner Gas Processing Plant
Eddy County
Lucid Energy Delaware LLC

(11) Which is utilized for this device?	automatic ignition system	

Stream Sent to Flare/Vapor Combustor No.	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**Total**
Stream Sent to Flare/Vapor Combustor Name (Enter Names of Each Stream Here)		**Waste Gas from Dehy**	**Waste Gas from Amine**	**Supplemental Fuel**									-
Maximum Expected Hourly Volumtric Flow Rate of Stream (scf/hr)		0	137370	29,412									**166781.746**
Amount of Time Stream Fired (hrs/yr)		0	8760	8760									-
Maximum Expected Annual Volumtric Flow Rate of Stream (scf/yr)		-	1,203,361,036	257,647,059									**1,461,008,095**
Heat Value of Stream - from program results or gas analysis (Btu/scf)		0	10.03	1,020									-
propane weight percent of total stream (%) *OPTIONAL*													-
VOC weight percent of total stream (%) *OPTIONAL*													-

Hourly (lb/hr)

Stream Sent to Flare/Vapor Combustor No.	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**Total**

Table 5

Thermal Oxidizer Emissions (EP-9)
Roadrunner Gas Processing Plant
Eddy County
Lucid Energy Delaware LLC

Stream Sent to Flare/Vapor Combustor Name		**Waste Gas from Dehy**	**Waste Gas from Amine**	**Supplemental Fuel**									-
H2S	-	0.00	2.11										**2.11**
Crude or Condensate VOC	-												**0.00**
Natural Gas VOC	-	495.10	380.65										**875.74**
Total VOC	-	495.10	380.65										**875.74**
benzene	-	92.63	16.97										**109.60**
Annual (tpy)													
H2S	-	0	9										**9.22**
Crude or Condensate VOC	-	0.00	0.00										**0.00**
Natural Gas VOC	-	0.00	1667.23										**1667.23**
Total VOC	-	0.00	1667.23										**1667.23**
benzene	-	0.00	74.34										**74.34**

Controlled Emissions

Hourly (lb/hr)

Stream Sent to Flare/Vapor Combustor No.	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**Total**
Stream Sent to Flare/Vapor Combustor Name		**Waste Gas from Dehy**	**Waste Gas from Amine**	**Supplemental Fuel**									-
NOx	0.000	--[1]	--[1]	--[1]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	**5.49**
CO	0.000	--[1]	--[1]	--[1]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	**2.98**
PM2.5	0.000	--[2]	--[2]	--[2]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	**0.60**
PM10	0.000	--[2]	--[2]	--[2]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	**0.60**
H2S	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	**0.00**
SO2	0.000	0.000	3.957	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	**3.96**
Crude or Condensate VOC	-	-	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	**0.00**
Natural Gas VOC	0.00	0.50	0.381	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	**0.88**
Total VOC	0.00	0.50	0.381	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	**0.88**
benzene	0.000	0.09263	0.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	**0.11**
Annual (tpy)													
Stream Sent to Flare/Vapor Combustor No.	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**Total**
Stream Sent to Flare/Vapor Combustor Name		**Waste Gas from Dehy**	**Waste Gas from Amine**	**Supplemental Fuel**									-
NOx	0.000	--[1]	--[1]	--[1]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	**24.06**
CO	0.000	--[1]	--[1]	--[1]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	**13.05**
PM2.5	0.000	--[2]	--[2]	--[2]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	**2.63**
PM10	0.000	--[2]	--[2]	--[2]	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	**2.63**
H2S	0.000	0.000	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	**0.01**
SO2	0.000	0.000	17.334	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	**17.33**
Crude or Condensate VOC	-	-	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	**0.00**
Natural Gas VOC	0.000	0.000	1.667	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	**1.67**
Total VOC	0.000	0.000	1.667	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	**1.67**
benzene	0.000	0.0000	0.074	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	**0.07**

[1] CO and NOx emissions calculated based on the emission gurantees from manufacturer and the exhaust flue from the TO.

[2] $PM_{10}/PM_{2.5}$ emissions based on the emission guarantee from the manufacturer and the maximum heating rate of the TO.

Table 5

Thermal Oxidizer Emissions (EP-9)
Roadrunner Gas Processing Plant
Eddy County
Lucid Energy Delaware LLC

Flare/Vapor Combustor Total Emissions (Each TO)		
	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
Crude or Condensate VOC	0.00	0.00
Natural Gas VOC	0.88	1.67
Total VOC	0.88	1.67
NOx	5.49	24.06
CO	2.98	13.05
PM2.5	0.60	2.63
PM10	0.60	2.63
H2S	0.00	0.01
SO2	3.96	17.34
benzene	0.11	0.07

Table 6

Emergency Flare Emissions
Roadrunner Gas Processing Plant
Eddy County
Lucid Energy Delaware LLC

Emission Unit: EP-1 and 4-EP-1 (2/3-EP1 is double EP-1 or 4-EP-1)

Emission Factors		
Emission Factors from AP-42 Tables 13.5, 1.4-2, and 1.4-3		
	NOx	0.068 lb/MMBtu
	CO	0.310 lb/MMBtu
	VOC	0.6600 lb/MMBtu
	SO2	0.6 lb/MMBtu

Constants	
Btu/MMBt	1,000,000
scf/MMscf	1,000,000
lb/ton	2,000
H_2S molecular	34.08
SO_2	64.06
seconds/ho	3,600
inches/ft	12
DRE	98%

Stream Sent to Flare/Vapor Combustor Name (Enter Names of Each Stream Here)	**pilot(s)**	**Purge**	**Malfunction Stream**	**-**
Maximum Expected Hourly Volumtric Flow Rate of Stream (scf/hr)	500	2000	9,166,667	**9169166.67**
Amount of Time Stream Fired (hrs/yr)	8760	8760	24	-
Maximum Expected Annual Volumtric Flow Rate of Stream (scf/yr)	4,380,000.00	17,520,000.00	220,000,000.00	**241900000**
Heat Value of Stream - from program results or gas analysis (Btu/scf)	1,020.00	1,020.00	1,070.00	-
VOC mol percent of total stream (%) *OPTIONAL*			8.200	-

Table 6

Emergency Flare Emissions
Roadrunner Gas Processing Plant
Eddy County
Lucid Energy Delaware LLC

Hourly (lb/hr)					
Stream Sent to Flare/Vapor Combustor Name	**pilot(s)**	**Purge**	**Malfunction Stream**	**-**	
H2S	-	-	0.00	**0**	
VOC	-	-	106947.88		
Benzene	-	-	57.37		
Toluene	-	-	23.04		
Ethylbenzene	-	-	0.00		
Xylene			0.00		
Hexane			1051.77		
2,2,4-trimethylpentane			0.00		
Annual (tpy)					
H2S	-	-	0.00	**0**	
VOC	-	-	1283.37		
Benzene	-	-	0.69		
Toluene	-	-	0.28		
Ethylbenzene	-	-	0.00		
Xylene			0.00		
Hexane			12.62		
2,2,4-trimethylpentane			0.00		

Controlled Emissions					
Hourly (lb/hr)					
Stream Sent to Flare/Vapor Combustor Name	**pilot(s)**	**Purge**	**Malfunction Stream**	**-**	
NOx	0.0347	0.139	666.967	**667.14**	0.1734
CO	0.158	0.632	3040.583	**3041.37**	
H2S	0.163	0.001	0.000	**0.16**	
SO2	0.306	0.001	0.000	**0.31**	
Natural Gas VOC	0.337	1.346	2138.958	**2140.64**	
Benzene	-	-	1.147	**1.15**	
Toluene	-	-	0.461	**0.46**	
Ethylbenzene	-	-	0.000	**0.00**	
Xylene	-	-	0.000	**0.00**	
Hexane	-	-	21.035	**21.04**	
2,2,4-trimethylpentane	-	-	0.000	**0.00**	
Total VOC	0.337	1.346	2138.958	**2140.64**	

Table 6

Emergency Flare Emissions
Roadrunner Gas Processing Plant
Eddy County
Lucid Energy Delaware LLC

Annual (tpy)				
Stream Sent to Flare/Vapor Combustor Name	**pilot(s)**	**Purge**	**Malfunction Stream**	**-**
NOx	0.152	0.608	6.563	**7.32**
CO	0.692	2.770	29.913	**33.37**
H2S	0.713	0.003	0.000	**0.72**
SO2	1.340	0.005	0.000	**1.35**
Natural Gas VOC	1.474	5.897	16.538	**23.91**
Benzene	-	-	0.014	**0.01**
Toluene	-	-	0.006	**0.01**
Ethylbenzene	-	-	0.000	**0.00**
Xylene	-	-	0.000	**0.00**
Hexane	-	-	0.252	**0.25**
2,2,4-trimethylpentane	-	-	0.000	**0.00**
Total VOC	1.474	5.897	16.538	**23.91**

Emergency Flare Total Emissions		
	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
Natural Gas VOC	2140.64	23.91
Total VOC	2140.64	23.91
NOx	667.14	7.32
CO	3041.37	33.37
H2S	0.16	0.72
SO2	0.31	1.35

Working/Breathing Emissions
Roadrunner Gas Processing Plant
Eddy County
Lucid Energy Delaware LLC

Promax Tank Loss Stencil Input		
Emission Unit		**T1-5**
Number of Tanks		5
Tank Contents		Condensate
Tank Color		White
Location		Eddy-Loving, NM
Tank Size	bbl	1000
Shell Length	ft	16
Shell Diameter	ft	21.5
Breather Vent Pressure	psig	0.03
Breather Vac Pressure	psig	-0.03
Operating Pressure	psig	0
Avg. Percent Liquid	%	50
Max Percent Liquid	%	90
Net Throughput	bbl/day	8000
Atmospheric Pressure	psia	14.70
Max Liq Surface Temperature	°F	70.00
Combustor Control Efficiency	%	95%

Components	T1-5 Working/Breathing[1] Losses (lb/hr)	T1-5 Working/Breathing[1] Losses (ton/yr)
Carbon Dioxide	0.00	0.00
Hydrogen Sulfide	0.00	0.00
Nitrogen	0.00	0.00
Methane	0.00	0.00
Ethane	0.00	<0.01
Propane	<0.01	<0.01
Isobutane	0.09	0.38
n-Butane	4.54	19.89
Isopentane	6.95	30.42
n-Pentane	7.35	32.20
n-Hexane	3.58	15.66
Heptane	0.96	4.22
Cyclopentane	0.38	1.68
Benzene	0.17	0.76
Cyclohexane	0.43	1.87
Methylcyclohexane	0.28	1.23
2,2,4-Trimethylpentane	0.07	0.30
Toluene	0.05	0.21
Ethylbenzene	0.01	0.04
Xylenes	<0.01	0.02
Octane	0.06	0.27
TOTAL UNCONTROLLED LOSSES:	**24.92**	**109.16**
TOTAL UNCONTROLLED VOC LOSSES:	**24.92**	**109.16**
TOTAL UNCONTROLLED HAP LOSSES:	**3.88**	**17.00**
TOTAL CONTROLLED VOC LOSSES:	**1.25**	**5.46**
TOTAL CONTROLLED HAP LOSSES:	**0.19**	**0.85**

[1] Flashing losses were not considered as the condensate is stable prior to storage in the tanks.

[2] Produced water emissions were calculated assuming a 99% reduction of condensate emissions

Working/Breathing Emissions
Roadrunner Gas Processing Plant
Eddy County
Lucid Energy Delaware LLC

Promax Tank Loss Stencil Input		
Emission Unit		**T6**
Number of Tanks		1
Tank Contents		Waste Water
Tank Color		White
Location		Eddy-Loving, NM
Tank Size	bbl	500
Shell Length	ft	16
Shell Diameter	ft	15.5
Breather Vent Pressure	psig	0.03
Breather Vac Pressure	psig	-0.03
Operating Pressure	psig	0
Avg. Percent Liquid	%	50
Max Percent Liquid	%	90
Net Throughput	bbl/day	70.19
Atmospheric Pressure	psia	14.70
Max Liq Surface Temperature	°F	63.40
Combustor Control Efficiency	%	0%

Components	T6 Working/Breathing[1] Losses (lb/hr)	T6 Working/Breathing[1] Losses (ton/yr)
Carbon Dioxide	0.23	1.00
Hydrogen Sulfide	<0.01	0.01
Nitrogen	<0.01	<0.01
Methane	0.23	1.01
Ethane	0.19	0.84
Propane	0.10	0.42
Isobutane	0.01	0.05
n-Butane	0.02	0.11
Isopentane	<0.01	0.02
n-Pentane	<0.01	<0.01
n-Hexane	<0.01	<0.01
Heptane	<0.01	<0.01
Cyclopentane	<0.01	<0.01
Benzene	<0.01	0.02
Cyclohexane	<0.01	<0.01
Methylcyclohexane	<0.01	<0.01
2,2,4-Trimethylpentane	<0.01	<0.01
Toluene	<0.01	<0.01
Ethylbenzene	<0.01	<0.01
Xylenes	<0.01	<0.01
Octane	<0.01	<0.01
TOTAL UNCONTROLLED LOSSES:	**0.80**	**3.50**
TOTAL UNCONTROLLED VOC LOSSES:	**0.14**	**0.63**
TOTAL UNCONTROLLED HAP LOSSES:	**<0.01**	**0.02**
TOTAL CONTROLLED VOC LOSSES:	**0.14**	**0.63**
TOTAL CONTROLLED HAP LOSSES:	**<0.01**	**0.02**

[1] Flashing losses were not considered as the waste water is stable prior to storage in the tank.

Table 8

MSS - Tank Cleaning
Roadrunner Gas Processing Plant
Eddy County
Lucid Energy Delaware

Emission Unit	MSSM
Name	Condensate Tanks
Tank No.:	5
Product stored:	Condensate
Type of tank roof	Fixed Roof
Tank Capacity (bbl)	1,000
Tank Diameter (ft) (D)	21.50
Vapor Molecular Wt. (lb/lb mol) (M_v)	71.96
Number of events/yr	5
Height of the roof (ft)	16.00
Saturation factor (S)	1.0

Vapor Space Volume (ft^3) (V_v)	5808.80
Height of Vapor Space under roof (ft)* (h_v)	16.00

	Max. hourly emissions lb/hr	Avg.Annual emissions tpy	
Duration of activity (hrs/event)	1	1	
True Vapor Pressure (psia) (P)	11.23	6.79	Max > Avg
Day time temperature (°F)	95.00	63.20	Max > Avg
Night time temperature (°F)	68.00	49.10	
Temperature Expansion %	4.86	2.69	
Emissions (lb/event)	788.18	505.38	
Max. Hourly Emissions (lb/hr)	38.34		
Avg. Hourly Emissions (lb/hr)		13.62	
Avg. Annual emissions (tpy)		0.03	

VOC Wt%	100.00
H_2S Wt%	-
Benzene Wt%	0.69

Type of Control Device	
Are tank vapors (A) uncontrolled; (B) controlled by a flare, vapor combustor, thermal oxidizer, or vapor recovery unit (VRU); or (C) controlled by another type of control device?	(B) cont. by flare/ VC/TO/VRU
VOC Control Efficiency	95
H_2S Control Efficiency	95

VOC Type: (pick from list)
Natural Gas VOC

Emission Type: (pick from list)
Low Pressure Periodic

Table 8

MSS - Tank Cleaning
Roadrunner Gas Processing Plant
Eddy County
Lucid Energy Delaware

Emissions before control and before wt% reduction		
Type of Losses	Max. hourly emissions lb/hr	Avg.Annual emissions tpy
Thermal / Passive Expansion	38.34	0.03
Vapors Captured by Control Device		
Air Contaminant	Max. hourly emissions lb/hr	Avg.Annual emissions tpy
Total VOC	36.43	0.03
Total H_2S	0.00	0.00
Total Benzene	0.25	0.00
Planned MSS Emissions		
Air Contaminant	**Max. hourly emissions lb/hr**	**Avg.Annual emissions tpy**
Total VOC	**1.92**	**<0.01**
Benzene	**0.01**	**<0.01**
Toluene	**<0.01**	**<0.01**
Ethylbenzene	**<0.01**	**<0.01**
Xylene	**<0.01**	**<0.01**
Hexane	**0.28**	**<0.01**
2,2,4-Trimethylpentane	**<0.01**	**<0.01**
Total H_2S	**-**	**-**
Total Benzene	**0.01**	**<0.01**

Notes: Calculations based on four tanks being cleaned once a year for the duration of one hour. True vapor pressure calculated from Reid vapor pressur using AP-42 Figure 7.1-14a. Reid vapor pressure collected from Promax simulation.

Table 8

MSS - Tank Refilling
Roadrunner Gas Processing Plant
Eddy County
Lucid Energy Delaware

Emission Unit	MSSM
Tank#	5
How many events in a year per tank	1
What is the net throughput through each tank (bbl/cleaning)	1000
What is the RVP of the mixture	9.00
What is the average surface liquid temperature (F)	70.70
Vapour pressure at average surface temperature (psia)	7.69
Tank height (ft)	16
Tank Diameter (ft)	21.5
Tank Roof Height (ft)	16.0
Tank Average Liquid Height (ft)	8.0
Tank maximum volume (ft3)	5808.80
Turnovers	1.00
Working loss saturation factor	1.00
Working loss product factor	0.75
Vapor space outage (ft)	13.33
Vented Space Saturation Factor	0.16
Stock Vapor Density (lb/ft3)	0.10

TVP Calculation at Avg. Annual Temp.

9.75
63.20
7.57

Venting Gas Molecular Weight (lb/lb-mol)	71.96
VOC Wt%	100.00
H_2S Wt%	0.00
Benzene Wt%	0.69
Are tank vapors (A) uncontrolled; (B) controlled by a flare, vapor combustor, thermal oxidizer, or vapor recovery unit (VRU); or (C) controlled by another type of control device?	(B) cont. by flare/ VC/TO/VRU
VOC Control Efficiency	95.00
H_2S Control Efficiency	95.00

Breathing Losses (lbs/event)	2.92
Working Losses (lbs/event)	414.79

Table 8

MSS - Tank Refilling
Roadrunner Gas Processing Plant
Eddy County
Lucid Energy Delaware

Emissions Before Control		
	Hourly Emissions (lb/event)	Annual Emissions (tons/event)
Total VOC	417.71	0.21
Benzene	2.90	0.00
Toluene	0.00	0.00
Ethylbenzene	0.00	0.00
Xylene	0.00	0.00
Hexane	0.14	0.03
2,2,4-Trimethylpentane	0.00	0.00
Total H_2S	0.00	0.00

Planned MSS Emissions		
	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
Total VOC	20.89	0.01
Benzene	0.14	0.07
Toluene	<0.01	<0.01
Ethylbenzene	<0.01	<0.01
Xylene	<0.01	<0.01
Hexane	<0.01	<0.01
2,2,4-Trimethylpentane	-	-
Total H_2S	-	-

Enter any notes here:	

Table 9

Condensate Loading Emissions
Roadrunner Gas Processing Plant
Eddy County
Lucid Energy Delaware, LLC

Truck Hourly Loading Emission Calculations

Using equation L_L = 12.46* SPM/T from AP-42, Chapter 5, Section 5.2-4

S =	1.00	Saturation Factor
P =	11.23	True vapor pressure of liquid loaded (psia)
M =	71.96	Molecular Weight of Vapors (lb/lb-mole)
T =	554.67	Temperature of bulk liquid loaded (in degrees Rankine)
Hourly Loading Rate	8,000	Gallons Loaded per Hour
L_L =	1.09	Loading Loss (lb VOC released/1000 gal liquid loaded)
	8.71	VOC Uncontrolled Emissions (lb/hr)
Tank Vapor Weight Percents		
VOC	100.00	Tank Vapor VOC wt%
benzene	0.64	Tank Vapor Benzene wt%
H_2S	0.00	Tank Vapor H2S wt%
Produced Water Reduction		
		Percent Reduction for Produced Water Tank Calc. as Oil/Cond. (%)
Uncontrolled Emissions		
VOC	8.71	Emissions Uncontrolled VOC (lb/hr)
benzene	0.06	Emissions Uncontrolled Benzene (lb/hr)
H_2S	0.00	Emissions Uncontrolled H_2S (lb/hr)
Collection Efficiency (only fill out if loading vapors are routed to a control device)		
VOC		VOC Collection Efficiency (%)
H_2S		H_2S Collection Efficiency (%)
Vapors Uncaptured by Control Device (only fill out if loading vapors are routed to a control device)		
VOC	8.71	VOC Uncaptured Vapors (lb/hr)
benzene	0.06	benzene Uncaptured Vapors (lb/hr)
H_2S	0.00	H_2S Uncaptured Vapors (lb/hr)
Control Efficiency (only fill out if loading vapors are routed to a control device)		
VOC	0.00	VOC Control Efficiency (%)
H_2S	0.00	H_2S Control Efficiency (%)
Vapors Uncaptured by Control Device (only fill out if loading vapors are routed to a control device)		
VOC	0.00	VOC Results (lb/hr)
benzene	0.00	Benzene Results (lb/hr)
H_2S	0.00	H_2S Results (lb/hr)

Reduction Efficiency
94

Enter temperature in Fahrenheit °F):	Temperature in Rankine (°R):
95	554.67

Enter Barrels of Liquid	Gallons of liquid:
8000	336000

Gallons per Year	Barrels per day:
122,640,000	8000

Enter any notes here:

- Uncaptured emissions presented in summary Table 3.
- Molecular weight and vapor pressure referenced from EPA TANKS 4.0.9D

Table 9

Condensate Loading Emissions
Roadrunner Gas Processing Plant
Eddy County
Lucid Energy Delaware, LLC

Truck Annual Loading Emission Calculations

Using equation L_L = 12.46* SPM/T from AP-42, Chapter 5, Section 5.2-4

S =	1.00	= Saturation Factor
P =	7.35	= True vapor pressure of liquid loaded (psia)
M =	71.96	= Molecular Weight of Vapors (lb/lb-mole)
T =	527.67	= Temperature of bulk liquid loaded (in degrees Rankine)
Annual Loading Rate	122,640,000	= Gallons Loaded per Year
L_L =	0.75	Loading Loss (lb VOC released/1000 gal liquid loaded)
	45.97	VOC Uncontrolled Emissions (ton/yr)
Tank Vapor Weight Percents		
VOC	100.00	Tank Vapor VOC wt%
benzene	0.64	Tank Vapor Benzene wt%
H_2S	0.00	Tank Vapor H2S wt%
Produced Water Reduction		
	0.00	Percent Reduction for Produced Water Tank Calc. as Oil/Cond. (%)
Uncontrolled Emissions		
VOC	45.97	Emissions Uncontrolled VOC (ton/yr)
benzene	0.29	Emissions Uncontrolled Benzene (ton/yr)
H_2S	0.00	Emissions Uncontrolled H_2S (ton/yr)
Collection Efficiency (only fill out if loading vapors are routed to a control device)		
VOC	0.00	VOC Collection Efficiency (%)
H_2S	0.00	H_2S Collection Efficiency (%)
Vapors Uncaptured by Control Device (only fill out if loading vapors are routed to a control device)		
VOC	45.97	VOC Uncaptured Vapors (ton/yr)
benzene	0.29	benzene Uncaptured Vapors (ton/yr)
H_2S	0.00	H_2S Uncaptured Vapors (ton/yr)
Control Efficiency (only fill out if loading vapors are routed to a control device)		
VOC	0.00	VOC Control Efficiency (%)
H_2S	0.00	H_2S Control Efficiency (%)
Vapors Uncaptured by Control Device (only fill out if loading vapors are routed to a control device)		
VOC	0.00	VOC Results (ton/yr)
benzene	0.00	Benzene Results (ton/yr)
H_2S	0.00	H_2S Results (ton/yr)

Reduction Efficiency
94

Enter temperature in Fahrenheit °F):	Temperature in Rankine (°R):
68	527.67

Enter Barrels of Liquid	Gallons of liquid:
8000	336000

Enter gallons per year	Barrels per day:
122640000	8000

Enter any notes here:

- Uncaptured emissions presented in summary Table 3.
- Molecular weight and vapor pressure referenced from TANKS 4.0.9D

Table 10

Enclosed Combuster Emissions
Roadrunner Gas Processing Plant
Eddy County
Lucid Energy Delaware LLC

Emission Unit: COMB-1

Emission Factors

Emission Factors from AP-42 Table 1.4-1 and 1.4-2 (lb/MMscf)

NOx	100	0.138 lb/MMBtu
CO	84	0.276 lb/MMBtu
PM (Total)	7.6	0.0075 lb/MMBtu

Emission Factors from AP-42 Table 1.4-3 (lb/MMscf)

SO_2	0.6	
VOC	5.5	0.0054 lb/MMBtu
benzene	2.10E-03	
propane	1.60	

Constants

Btu/MMBt	1,000,000
scf/MMscf	1,000,000
lb/ton	2,000
molecular	34.08
SO_2	64.06
seconds/hou	3,600
inches/ft	12
DRE	95%

Stream Sent to Flare/Vapor Combustor Name (Enter Names of Each Stream Here)		**MSS**	**Tank Working/Breathing**		**-**
Maximum Expected Hourly Volumtric Flow Rate of Stream (scf/hr)		6526.309534	131.43		**6657.735766**
Amount of Time Stream Fired (hrs/yr)		5	8760		**-**
Maximum Expected Annual Volumtric Flow Rate of Stream (scf/yr)		32,631.55	1,151,293.80		**1183925.343**
Heat Value of Stream - from program results or gas analysis (Btu/scf)		3985.80	3,985.80		**-**
propane weight percent of total stream (%) *OPTIONAL*					**-**
VOC weight percent of total stream (%) *OPTIONAL*					**-**

Hourly (lb/hr)					
Stream Sent to Flare/Vapor Combustor Name		**MSS**	**Tank Working/Breathing**		**-**
VOC	-	1048.70	24.92		**1073.62**
Annual (tpy)					
VOC	-	12.13	109.16		**121.30**

Table 10

Enclosed Combuster Emissions
Roadrunner Gas Processing Plant
Eddy County
Lucid Energy Delaware LLC

Controlled Emissions

Hourly (lb/hr)

Stream Sent to Flare/Vapor Combustor Name		MSS	Tank Working/Breathing		-
NOx	0.000	3.590	0.072	0.000	**3.66**
CO	0.000	7.166	0.144	0.000	**7.31**
PM2.5	0.000	0.050	0.004	0.000	**0.05**
PM10	0.000	0.050	0.004	0.000	**0.05**
H2S	0.000	0.002	0.000	0.000	**0.00**
SO2	0.000	0.004	0.000	0.000	**0.00**
Natural Gas VOC	0.000	52.435	1.246	0.000	**53.68**
Total VOC	0.000	52.435	1.246	0.000	**53.68**

Annual (tpy)

Stream Sent to Flare/Vapor Combustor Name		MSS	Tank Working/Breathing		-
NOx	0.000	0.009	0.317	0.000	**0.33**
CO	0.000	0.018	0.632	0.000	**0.65**
PM2.5	0.000	0.000	0.017	0.000	**0.02**
PM10	0.000	0.000	0.017	0.000	**0.02**
H2S	0.000	0.000	0.000	0.000	**0.00**
SO2	0.000	0.000	0.000	0.000	**0.00**
Natural Gas VOC	0.000	0.607	5.458	0.000	**6.06**
Total VOC	0.000	0.607	5.458	0.000	**6.06**

Table 10

Enclosed Combuster Emissions
Roadrunner Gas Processing Plant
Eddy County
Lucid Energy Delaware LLC

Flare/Vapor Combustor Total Emissions		
	Hourly Emissions	Annual Emissions (tpy)
Natural Gas VOC	53.68	6.06
Benzene	0.37	0.04
Toluene	0.10	0.01
Ethylbenzene	0.02	0.00
Xylene	0.01	0.00
Hexane	7.70	0.87
2,2,4-Trimethylpentane	0.15	0.02
NOx	3.66	0.33
CO	7.31	0.65
PM2.5	0.05	0.02
PM10	0.05	0.02
H2S	0.00	0.00
SO2	0.00	0.00

Table 11

Fugitive Emissions
Roadrunner Gas Processing Plant
Lucid Energy Delaware, LLC

Emission Unit: Fug and FUG2
Source Description: Fugitive Emissions

Emission Calculation

Equip Cat	Type	Monitor Frequency	Component Count	Emission Factor[1] (kg/hr/source)	Control (%)	Inlet Gas % VOC	Inlet Gas % HAP	Inlet Gas % H_2S	Inlet Gas % CH4	Inlet Gas % CO2	Total Organic Compounds Uncontrolled Rate (lb/hr)	Total Organic Compounds Controlled Rate (lb/hr)
Connector	Vapor	Yearly (SS)	10892	2.00E-04	0%	8.8%	0.26%	0.000%	77.219%	0.331%	4.8025	4.8025
Press Relief Device	Vapor	Yearly (SS)	20	8.80E-03	0%						0.3880	0.3880
Valve	Vapor	Monthly (SS)	2676	4.50E-03	87%						26.5478	3.4512
										Hourly Total	31.74	8.64
										Annual Total	139.0	37.9

Equip Cat	Type	VOC Uncontrolled Rate (lb/hr)	VOC Controlled Rate (lb/hr)	Total HAP Uncontrolled Rate (lb/hr)	Total HAP Controlled Rate (lb/hr)	H_2S Uncontrolled Rate (lb/hr)	H_2S Controlled Rate (lb/hr)	CH_4 Uncontrolled Rate (lb/hr)	CH_4 Controlled Rate (lb/hr)	CO_2 Uncontrolled Rate (lb/hr)	CO_2 Controlled Rate (lb/hr)
Connector	Vapor	0.42	0.42	1.25E-02	1.25E-02	0.00E+00	0.00E+00	3.71E+00	3.71E+00	1.59E-02	1.59E-02
Press Relief Device	Vapor	0.034	0.034	1.01E-03	1.01E-03	0.00E+00	0.00E+00	3.00E-01	3.00E-01	1.28E-03	1.28E-03
Valve	Vapor	2.34	0.30	6.92E-02	8.99E-03	0.00E+00	0.00E+00	2.05E+01	2.66E+00	8.77E-02	1.14E-02
Hourly Total		**2.80**	**0.76**	**0.083**	**0.0225**	**0.00E+00**	**0.00E+00**	**24.51**	**6.67**	**0.10**	**0.029**
Annual Total (tpy)		**12.3**	**3.3**	**0.36**	**0.099**	**0.00E+00**	**0.00E+00**	**107.34**	**29.23**	**0.46**	**0.13**

Notes

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

[2] An hourly emission limit is not appropriate for this source type.

Table 12

Haul Road Emissions
Roadrunner Gas Processing Plant
Lucid Energy Delaware, LLC

Haul Road Inputs

Site-Wide

Description	Value	Unit
Crude Throughput	5,490	bbl/day
Annual Operating Hours:	8,760	hr
Daily Operating Hours:	24	hr

Unpaved Haul Road

Parameter	Value	Unit
Empty Vehicle Weight[1]	16	ton
Load Size [2]	21.2	ton
Loaded Vehicle Weight[3]	37.2	ton
Mean Vehicle Weight[4]	26.6	ton
Vehicles Per Day [5]	12	VPD
Vehicles Per Year	4380	VPY
Segment Length	0.06	mile
Trips per Segment	2	-
Effective Segment Length[6]	0.12	mile
Trips per Hour[7]	1.00	-
Wet Days[8]	60	day
Surface Silt Content[9]	4.8	%
Control Efficiency	0	%

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

[2] Include cargo, transported materials, etc. (5.6 lb/gal RVP10 *7560 gal truck/ 2000lb/ton)

[3] Loaded vehicle weight = Empty + Load Size

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

[5] Vehicles per day = (Turnovers/year) / (365 days/year)

[6] Effective segment length = trips per segment * segment length

[7] Trips per hour = Vehicles per day * Segments per trip ÷ Hours of Operation per Day

[8] Wet days is the NM default allowed by NMED without additional justification

[9] Surface silt content based on AP-42 Section 13.2.2.3

Table 12

Haul Road Emissions
Roadrunner Gas Processing Plant
Lucid Energy Delaware, LLC

Unpaved Road Emission Factors

	Calculation Parameters [1]												Hourly Emission Factors			Annual Emission Factors		
	s	W	P	k			a			b			E [2]			E_{ext} [5]		
Route	Silt Content [1]	Mean Vehicle Weight	Wet Days	PM_{30}	PM_{10}	$PM_{2.5}$	PM_{30}	PM_{10}	$PM_{2.5}$	PM_{30}	PM_{10}	$PM_{2.5}$	PM_{30} [3]	PM_{10}	$PM_{2.5}$	PM_{30}	PM_{10}	$PM_{2.5}$
	%	tons	day	lb/VMT	lb/VMT	lb/VMT							lb/VMT	lb/VMT	lb/VMT	lb/VMT	lb/VMT	lb/VMT
Crude Oil Trucks	4.8	26.6	60	4.9	1.5	0.15	0.70	0.90	0.90	0.45	0.45	0.45	6.9	1.8	0.18	5.8	1.5	0.15

[1] Emission factors calculated per AP-42 Sec. 13.2.2.3 November, 2006, Equation 2.

Unpaved Road Emissions

	Calculation Inputs						Uncontrolled Emissions						Controlled Emissions [6]					
Route	Annual Operation	Segment Length	Trips per Segment	Number of Trucks per Year	Effective Segment Length	Average VMT/yr [4]	PM_{30}		PM_{10}		$PM_{2.5}$		PM_{30}		PM_{10}		$PM_{2.5}$	
	hr	mi		trucks/yr	mi	mi/yr	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Crude Oil Trucks	8,760	0.06	2	4380	0.12	526	0.41	1.5	0.11	0.39	0.011	0.039	0.41	1.5	0.11	0.39	0.011	0.039
						Totals	***0.41***	***1.5***	***0.11***	***0.39***	***0.011***	***0.039***	***0.41***	***1.5***	***0.11***	***0.39***	***0.011***	***0.039***

[1] Surface silt = % of 75 micron diameter and smaller particles

[2] E = k x (s/12)^a x (W/3)^b (AP-42 page 13.2.2-4 Equation 1a, November 2006)

E= Size Specific Emission Factor (lb/VMT)

s = surface material silt content (%)

k, a, b = constants from AP-42 Table 13.2.2-2

W = Weighted Mean Vehicle Weight from Haul Road Inputs (tons)

[3] PM_{30} emission factor in equation is assumed as a surrogate for TSP emissions

[4] VMT/yr = Vehicle Miles Travelled per year= Trips per year * Segment Length

[5] Wet Day Emission Factor = E * (365 - Wet Days)/365. Wet days value is the NM default allowed by NMED without additional justification.

[6] Controlled Emissions = Uncontrolled Emissions * (1 - Control Factor/100%)

Control Efficiency = 0%

Table 13

Emission Unit	MSSM
Identifier	MSS Pigging

MSS - Pigging Emissions
Roadrunner Gas Processing Plant
Lucid Energy Delaware, LLC

Describe this MSS event in detail, include specifically what is being done and how it is being done.	Emissions from routine pigging activities.

Actual Volume of the Vented Unit (scf - standard cubic feet)	3,850.00
Actual Volume of the Vented Unit (acf - actual cubic feet)	62.43
Pressure of Gas Inside the Unit Before Venting (psig)	900
Atmospheric Pressure (psia)	14.7
Pressure of Gas Inside the Unit Before Venting (psia)	914.7
Temperature of Gas Inside the Unit Before Venting (°F)	65.00
Temperature of Gas Inside the Unit Before Venting (°R)	524.67
Duration of Each Event (hours/event)	0.17
Frequency of Events (events/year)	156
Venting Gas Molecular Weight (lb/lb-mol)	20.94
VOC wt %	21.55
benzene wt%	0.085
H_2S wt%	0.000
Are planned MSS vapors (A) uncontrolled; (B) controlled by a flare, vapor combustor, thermal oxidizer, or vapor recovery unit (VRU); or (C) controlled by another type of control device?	(A) uncontrolled
VOC Control Efficiency (%)	0
H_2S Control Efficiency (%)	0

Ideal Gas Constant, [(ft3*psia)/(R*lb-mol)]

10.73159

Gas Molecular Weight and Weight Percents From Analyses Tab:

Molecular Weight	20.94
VOC wt %	21.55
Benzene wt %	0.085
H2S wt %	0.000

Vapors Captured by Control Device

You need to input these values into the appropriate control device emission calculation tab.

	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
VOC Results:	0.00	0.0000
Benzene Results:	0.00	0.0000
H_2S Results:	0.00	0.0000

Planned MSS Emissions

	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
VOC Results:	**269.20**	**3.57**
Benzene Results:	**1.06**	**0.01**
H_2S Results:	**<0.01**	**<0.01**

VOC Type: (pick from list)
Natural Gas VOC

Emission Type: (pick from list)
High Pressure Periodic

Table 14

MSS - Blowdown Emissions
Roadrunner Gas Processing Plant
Lucid Energy Delaware, LLC

VENTING EMISSION CALCULATION (for blowdowns, starter vents, gas operated controllers, etc):

Emission Unit	MSSB	
Venting Volume per Event (SCF/event):	50000	(standard cubic feet)
Number of events per hour:	1	
Number of events per year:	40	
Venting Gas Molecular Weight	20.94	
VOC wt %	21.55	
benzene wt%	0.08	
H_2S wt%	0.00	
VOC Control Efficiency (%)	95.00	
H_2S Control Efficiency (%)	98.00	

Constant:

379.48 scf/lb-mol

Gas Wt % From Analyses Tab:

VOC wt %	21.55
Benzene wt %	0.08
H2S wt %	0.00

	lb/hr	**tpy**
Uncontrolled VOC Emissions:	594.6	11.8911
Uncontrolled benzene Emissions:	2.3362	0.0467
Uncontrolled H_2S Emissions:	0.0000	0.0000

VOC Results:	29.7	0.5946
Benzene Results:	0.1168	0.0023
H_2S Results:	0.0000	0.0000

Table 15

MSS - Miscellaneous Emissions
Roadrunner Gas Processing Plant
Lucid Energy Delaware, LLC

Default VOC emissions for Miscellaneous MSS activities

Company Name	Lucid Energy Delaware
Site Name	Roadrunner Gas Processing Plant

Default VOC emissions (tpy) associated with miscellaneous MSS activities	**0.250**
Add default VOC emissions from miscellaneous MSS activities to the emissions summary	Yes

#	Activity	Description / comments	Default parameters		Equation used		Input parameters		Annual emissions (tpy)
1	***(b)(1) Engine Oil changes / Filter changes*** The emissions associated with an engine oil/filter change occur during the draining of the used engine oil into oil pan or container.	-Engine has been isolated and blow down occurs prior to oil change. The emissions associated with the blow down [106.359 (b) (8)] need to be accounted for in the oil and gas emission calculation spreadsheet. -Oil is drained into a 4 ft x 4 ft open pan and transferred to a closed container per Best Management Practice (BMP). -Input parameters based on manufacturer specifications of engine oil SAE 10W (a). -Used a 1380 hp Caterpillar G3516B LE engine (b) as basis for calculation. In order to account for emissions from larger horse power engines, the emissions are doubled. An average engine uses 112 gallons of motor oil and manufacturer recommends changing oil every 1000 hrs. We used 10 changes of oil per year as a conservative estimate. -Emission estimates for 1380 hp engine are being doubled to be conservative and to accommodate engines with higher hp.	Temperature (°F)	212	Loading loss L_L (lb/1000 gal)	0.009	Number of engines	0	0.000
			Vapor pressure (psia)	0.001					
			Saturation factor	1	Loading loss per activity (lb/activity)	0.001			
			Molecular weight (lb/lbmol)	500					
			Motor oil (gal/activity)	112					
			U wind speed (m/s)	3.52	Evaporation Loss (lb/activity)	1.027			
			Vapor pressure P_v (Pa)	10					
			Molecular weight (lb/lbmol)	500					
			Surface Area A_p (m^2) (4ft * 4ft)	1.48					
			Evaporation time t (hrs)	10					
			Number of activities per year (Number of oil changes per engine per year)	10	Total (lbs/yr/engine)	20.565			
			Factor used to account for larger horsepower engines	2					
2	***(b)(1) & (b)(4) Changing Engine Rod Packings*** Emissions from changing of the rod would be from clingage of lubricant in the casing.	-Engine has been isolated and blow down occurs prior to changing rod packing. The emissions associated with the blow down [106.359 (b) (8)] need to be accounted for in the oil and gas emission calculation spreadsheet. -Emissions from clingage are the evaporation of the lubricant adhered to the rod packing casing. -Casing volume for calculations is based on field observation of casing for a 1380hp G3516B LE engine(b). -Input parameters based on material specifications for AP 101(c) grease.	Temperature (°F)	104	Clingage loss (lb/activity)	0.0001	Number of engines	0	0
			Vapor pressure (psia)	0.001					
			Molecular weight (lb/lb-mole)	500					
			V_V Casing volume (ft^3) (1ft * 3ft)	2.355					
			Ideal gas constant (psia-ft3/lb-mol-°R)	10.73					
			Number of activities per year (Number of rod packing changes per year per engine)	10	Total (lbs/yr/engine)	0.0012			
3	***(b)(3) Changing wet and dry seals*** Emissions from changing seals would be from clingage of lubricant in the casing.	-Engine has been isolated and blow down occurs prior to changing seals. The emissions associated with the blow down [106.359 (b) (8)] need to be accounted for in the oil and gas emission calculation spreadsheet. -Emissions from clingage are the evaporation of the lubricant adhered to the rod packing casing. -Casing volume for calculations is based on field observation of casing for a 1380 hp Caterpillar G3516B LE engine (b). -Input parameters based on material specifications for AP 101(c) grease.	Temperature (°F)	104	Clingage loss (lb/activity)	0.0001	Number of engines	0	0.000000
			Vapor pressure of material stored (psia)	0.001					
			Molecular weight (lb/lb-mole)	500					
			V_V Casing volume (ft^3) (1ft * 3ft)	2.355					
			Ideal gas constant (psia-ft3/lb-mol-°R)	10.73					
			Number of activities per year (Number of seal changes per year)	2	Total (lbs/yr/engine)	0.0002			
4	***(b)(2) Glycol dehydration unit*** Emissions associated with replacement of glycol solution used in dehydration unit. There are two vessels in a dehydration unit: contactor and regenerator.	-Calculations based on physical properties of mono ethylene glycol (MEG)(d) because of its low molecular weight and high vapor pressure which gives the most conservative emissions estimate. -Typically the glycol solution used in dehydration unit is not entirely replaced but it is conservatively assumed that the glycol solution is drained once per year for vessel maintenance. -Per field experience, 4000 gal of glycol solution is used in a large dehydration unit.	Temperature (°F)	68	Loading loss L_L (lb/1000 gal)	0.0015	Number of Dehy units	4	0.000043
			Vapor pressure (psia)	0.001					
			Saturation factor	1	Loading loss per activity (lb/activity)	0.0059			
			Molecular weight (lb/lbmol)	62.07					
			Glycol solution (gal/activity)	4000					
			Temperature (°F)	68	Clingage loss (lb/activity)	0.0155			
			Vapor pressure (psia)	0.001					
			Molecular weight (lb/lb-mole)	62.07					
			V_V Vessel volume (ft^3) (5 ft radii * 30 ft height)	2355					
			Ideal gas constant (psia-ft3/lb-mol-°R)	10.73					
			Number of activities per year	1	Total (lbs/yr/unit)	0.0213			

Table 15

MSS - Miscellaneous Emissions
Roadrunner Gas Processing Plant
Lucid Energy Delaware, LLC

5	***(b)(2) Amine unit*** Emissions associated with replacement of solution used in the amine unit. There are two vessels in an amine unit: Contactor and regenerator.	-Calculations based on physical properties of mono ethanol amine (MEA)(e) because of its low molecular weight and high vapor pressure which gives the most conservative emissions estimate. -Typically the solution used in amine unit is not entirely replaced but it is conservatively assumed that the amine solution is drained once per year for vessel maintenance. -Per field experience, 4000 gal of solution is used in a large amine unit.	Temperature (°F)	68	Loading loss L_L (lb/1000 gal)	0.0058	Number of Amine units	2	0.000084
			Vapor pressure (psia)	0.004					
			Saturation factor	1	Loading loss per activity (lb/activity)	0.0231			
			Molecular weight (lb/lbmol)	61.08					
			Amine solution (gal/activity)	4000					
			Temperature (°F)	68	Clingage loss (lb/activity)	0.0609			
			Vapor pressure (psia)	0.004					
			Molecular weight (lb/lb-mole)	61.08					
			V_V Vessel volume (ft^3) (5 ft radii * 30 ft height)	2355					
			Ideal gas constant (psia-ft3/lb-mol-°R)	10.73					
			Number of activities per year	1	Total (lbs/yr/unit)	0.0840			
6	***(b)(2) Heater Treater***	-Calculations based on condensate (RVP 10) because it has higher vapor pressure than crude oil (RVP 5) and results in a more conservative emission estimate. -Emission estimates are based on a large site that typically has 4 heater treaters.	Temperature (°F)	100	Clingage loss (lb/activity)	8.6913	Number of Heater Treaters	0	0.000
			Vapor pressure (psia)	10.5					
			Molecular weight (lb/lb-mole)	66					
			V_V Vessel volume (ft^3) (2ft radii * 10 ft height)	125.6					
			Ideal gas constant (psia-ft3/lb-mol-°R)	10.73					
			Number of activities per year	1	Total (lbs/yr/unit)	8.6913			
7	***(b)(2) Aerosol Lubricants***	-45-50% VOC by weight volatilizes. -Material specification per Lubricant MSDS (f). -VOC evaporation is based off standard engineering judgment consistent with product specification. - Standard Industrial Size Cans (oz.) 16			Pounds of emissions per can (lb/can)	0.5	Number of 16 oz cans used	200	0.050
8	***(b)(3) Piping Components***	-Calculations based on condensate (RVP 10) because it has higher vapor pressure than crude oil (RVP 5) and results in a more conservative emission estimate. -100 foot long pipe sections conservatively assumed for emission calculations.	Temperature (°F)	100	Clingage loss (lb/activity)	5.4321	Number of 100 ft in length of pipes	200	0.543
			Vapor pressure (psia)	10.5					
			Molecular weight (lb/lb-mole)	66					
			V_V Vessel volume (ft^3) (0.5 ft radii * 100 ft height)	78.50					
			Ideal gas constant (psia-ft3/lb-mol-°R)	10.73					
			Number of activities per year	1	Total (lbs/yr)	5.4321			
9	***(b)(3) Pneumatic controllers***	Based on field experience and recent site visits to two plants in Central Texas area, changing pneumatic controllers of equipment under pressure requires isolation of pipe section or process equipment and a blow down. There are no emissions associated with changing the controller.							
10	***(b)(2) Calibration***	-Per Monitoring Division's Laboratory and Quality Assurance Section - One cylinder of pentane or other calibration gas used per year and a typical cylinder contains 100 lbs.	Pounds of pentane in one cylinder (lb)	100	Pounds of pentane in one cylinder (lb/cylinder)	100	Number of cylinders	2	0.100
11	***(b)(6)*** Safety factor to account for MSS activities with the same character and quantity of emissions as those listed in paragraphs (b) (1) - (5) of §106.359.							1	0.028

		TPY	lbs/hr
	Total VOC emissions	**0.721**	**0.165**

VOC Type: (pick from list)
Crude Oil or Condensate VOC

Emission Type: (pick from list)
Steady State (continuous)

Greenhouse Gas Emissions from Combustion Sources
Roadrunner Gas Processing Plant
Lucid Energy Delaware, LLC

GHG Emissions from Natural Gas Combustion

Emission Source	Source Description	Heat Rate	CO_2 EF	CO_2 Emissions		CH_4 EF	CH_4 Emissions		N_2O EF	N_2O Emissions	
		mmbtu/hr	kg/mmbtu	metric TPY	short tpy	kg/mmbtu	metric TPY	short tpy	kg/mmbtu	metric TPY	short tpy
EP-2	Trim Reboiler	15.95	53.06	7413.65	8172.07	0.001	0.140	0.154	0.0001	0.014	0.015
2-EP-2, 3-EP-2, 4-EP-2	Trim Reboiler	17.55	53.06	8157.34	8991.83	0.001	0.154	0.169	0.0001	0.015	0.017
EP-3A	Amine Reboiler	55	53.06	25564.31	28179.54	0.001	0.482	0.531	0.0001	0.048	0.053
EP-3B	Amine Reboiler	55	53.06	25564.31	28179.54	0.001	0.482	0.531	0.0001	0.048	0.053
EP-4	Glycol Reboiler	3	53.06	1394.42	1537.07	0.001	0.026	0.029	0.0001	0.003	0.003
2-EP-4, 3-EP-4, 4-Ep-4	Glycol Reboiler	3	53.06	1394.42	1537.07	0.001	0.026	0.029	0.0001	0.003	0.003
EP-5	Regen Reboiler	5.61	53.06	2607.56	2874.31	0.001	0.049	0.054	0.0001	0.005	0.005
2-EP-5, 3-EP-5, 4-EP-5	Regen Reboiler	7.29	53.06	3388.43	3735.07	0.001	0.064	0.070	0.0001	0.006	0.007
EP-6, 2-EP-6	Stabilizer Heater	18	53.06	8366.50	9222.39	0.001	0.158	0.174	0.0001	0.016	0.017
EP-9	Thermal Oxidizer	75.00	53.06	34860.42	38426.64	0.001	0.657	0.724	0.0001	0.066	0.072
EP-1	Flare Pilot	0.19	53.06	88.31	97.35	0.001	0.002	0.002	0.0001	0.000	0.000
2/3-EP1	Flare Pilot	0.38	53.06	176.63	194.69	0.001	0.003	0.004	0.0001	0.000	0.000
4-EP-1	Flare Pilot	0.19	53.06	88.31	97.35	0.001	0.002	0.002	0.0001	0.000	0.000

Emission Factors (EF) from Tables C-1 and C-2 to 40 CFR 98 Subpart C

Greenhouse Gas Emissions from Combustion Sources
Roadrunner Gas Processing Plant
Lucid Energy Delaware, LLC

Emergency Flare GHG Emisssions

§98.233(n) Flare stack GHG emissions.

Step 1. Calculate contribution of un-combusted CH_4 emissions

$E_{a,CH4}$ (un-combusted) = V_a * (1- η)* X_{CH4} *(Equation W-39B)*

where:

$E_{a,CH4}$ = contribution of annual un-combusted CH_4 emissions from regenerator in cubic feet under actual conditions.

V_a = volume of gas sent to combustion unit during the year (cf)

η = Fraction of gas combusted by a burning flare (or regenerator), default value from 0.088 to 0.98
For gas sent to an unlit flare, η is zero.

X_{CH4} = Mole fraction of CH_4 in gas to the flare = 0.7722 (Client gas analysis)

Step 2. Calculate contribution of un-combusted CO_2 emissions

$E_{a,CO2}$ = V_a * X_{CO2} *(Equation W-20)*

where:

$E_{a,CO2}$ = contribution of annual un-combusted CO_2 emissions from regenerator in cubic feet under actual conditions.

V_a = volume of gas sent to combustion unit during the year (cf)

X_{CO2} = Mole fraction of CO_2 in gas to the flare = 0.003

Step 3. Calculate contribution of combusted CO_2 emissions

$E_{a,CO2}$ (combusted) = ∑ (η * V_a * Y_j * R_j) *(Equation W-21)*

where:

η = Fraction of gas combusted by a burning flare (or regenerator) = 0.98
For gas sent to an unlit flare, η is zero.

V_a = volume of gas sent to combustion unit during the year (cf)

Y_j = mole fraction of gas hydrocarbon constituents j:

Constituent j, Methane =	0.7722	(Client gas analysis)
Constituent j, Ethane =	0.1222	
Constituent j, Propane =	0.0562	
Constituent j, Butane =	0.01550	
Constituent j, Pentanes Plus =	0.0067	

R_j = number of carbon atoms in the gas hydrocarbon constituent j:

Constituent j, Methane =	1
Constituent j, Ethane =	2
Constituent j, Propane =	3
Constituent j, Butane =	4
Constituent j, Pentanes Plus =	5

Step 4. Calculate GHG volumetric emissions at standard conditions (scf).

$$E_{s,n} = \frac{E_{a,n} * (459.67 + T_s) * P_a}{(459.67 + T_a) * P_s}$$ *(Equation W-33)*

where:

$E_{s,n}$ = GHG i volumetric emissions at standard temperature and pressure (STP) in cubic feet

$E_{a,n}$ = GHG i volumetric emissions at actual conditions (cf)

T_s = Temperature at standard conditions (F) = 60 F
(Based on Annual Avg Max Temperature for Hobbs, NM from Western Regional Climate Center)

T_a = Temperature at actual conditions (F) = 76 F

P_s = Absolute pressure at standard conditions (psia) = 14.7 psia

P_a = Absolute pressure at actual conditions (psia) = 12.73 psia (Assumption)

Constant = 459.67 (temperature conversion from F to R)

Table 16

Greenhouse Gas Emissions from Combustion Sources
Roadrunner Gas Processing Plant
Lucid Energy Delaware, LLC

Step 5. Calculate annual CH_4 and CO_2 mass emissions (ton).

$Mass_{s,i} = E_{s,i} * \rho_i * 0.001 * 1.1023$ *(Equation W-36)*

where:

$Mass_{s,i}$ = GHG i (CO_2, CH_4, or N_2O) mass emissions at standard conditions in tons (tpy)

$E_{s,i}$ = GHG i (CO_2, CH_4, or N_2O) volumetric emissions at standard conditions (cf)

ρ_i = Density of GHG i. Use:

CH_4:	0.0192	kg/ft^3 (at 60F and 14.7 psia)
CO_2:	0.0526	kg/ft^3 (at 60F and 14.7 psia)

1×10^{-3} = conversion factor from kg to metric tons.

1.1203 = conversion factor from metric tons to short tons.

Step 6. Calculate annual N_2O emissions from portable or stationary fuel combustion sources under actual conditions (cf) using Equation W-40 .

$Mass_{N2O} = 0.001 * Fuel * HHV * EF * 1.1023$ *(Equation W-40)*

where:

$Mass_{N2O}$ = annual N_2O emissions from combustion of a particular type of fuel (tons).

Fuel = mass or volume of the fuel combusted

HHV = high heat value of the fuel

SSM flaring gas HHV =	0.00107	MMBtu/scf
EF =	1.00E-04	kg N_2O/MMBtu

10^{-3} = conversion factor from kg to metric tons.

1.1203 = conversion factor from metric tons to short tons.

Step 7. Calculate total annual emission from flare by summing Equations W-40, W-19, W-20, and W-21.

Gas Sent to Emergency Flare	Gas Sent to Flare (cf/yr)	CH_4 Un-Combusted, $E_{a,CH4}$ (cf)	CO_2 Un-Combusted, $E_{a,CO2}$ (cf)	CO_2 Combusted, $E_{a,CO2}$ (cf)	CH_4 Un-Combusted, $E_{a,CH4}$ (scf)	CO_2 Un-Combusted, $E_{a,CO2}$ (scf)	CO_2 Combusted, $E_{a,CO2}$ (scf)	CH_4 Un-Combusted, $E_{a,CH4}$ (tpy)	CO_2 Un-Combusted, $E_{a,CO2}$ (tpy)	CO_2 Combusted, $E_{a,CO2}$ (tpy)	N_2O Mass Emissions (tpy)	CO2e (tpy)
SSM Flaring (EP-1)	220,000,000	3,397,620	727,109	276,098,741	2,852,812	610,517	231,826,276	60.38	35.40	13,441.51	0.02595	14,994
Total	**220,000,000**	**3,397,620**	**727,108.9**	**276,098,741**	**2,852,812**	**610,516.9**	**231,826,276**	**60.4**	**35.4**	**13,441.5**	**0.02595**	**14,994**
SSM Flaring (2/3-EP-1)	440,000,000	6,795,241	1,454,218	552,197,481	5,705,623	1,221,034	463,652,553	121	71	26,883	0	29,988
Total	**440,000,000**	**6,795,241**	**1,454,218**	**552,197,481**	**5,705,623**	**1,221,034**	**463,652,553**	**121**	**71**	**26,883**	**0**	**29,988**
SSM Flaring (4-EP-1)	220,000,000	3,397,620	727,109	276,098,741	2,852,812	610,517	231,826,276	60	35	13,442	0	14,994
Total	**220,000,000**	**3,397,620**	**727,109**	**276,098,741**	**2,852,812**	**610,517**	**231,826,276**	**60**	**35**	**13,442**	**0**	**14,994**
								GWP	1	25	298	

Table 16

Greenhouse Gas Emissions from Combustion Sources
Roadrunner Gas Processing Plant
Lucid Energy Delaware, LLC

Combuster GHG Emissions

§98.233(n) Flare stack GHG emissions.

Step 1. Calculate contribution of un-combusted CH_4 emissions

$E_{a,CH4}$ (un-combusted) = V_a * (1- η)* X_{CH4} *(Equation W-39B)*

where:

$E_{a,CH4}$ = contribution of annual un-combusted CH_4 emissions from regenerator in cubic feet under actual conditions.

V_a = volume of gas sent to combustion unit during the year (cf)

η = Fraction of gas combusted by a burning flare (or regenerator), default value from Subpart W = 0.98
For gas sent to an unlit flare, η is zero.

X_{CH4} = Mole fraction of CH_4 in gas to the flare = 0.7852 (Client gas analysis)

Step 2. Calculate contribution of un-combusted CO_2 emissions

$E_{a,CO2}$ = V_a * X_{CO2} *(Equation W-20)*

where:

$E_{a,CO2}$ = contribution of annual un-combusted CO_2 emissions from regenerator in cubic feet under actual conditions.

V_a = volume of gas sent to combustion unit during the year (cf)

X_{CO2} = Mole fraction of CO_2 in gas to the flare = 0.013

Step 3. Calculate contribution of combusted CO_2 emissions

$E_{a,CO2}$ (combusted) = $\sum$ (η * V_a * Y_j * R_j) *(Equation W-21)*

where:

η = Fraction of gas combusted by a burning flare (or regenerator) = 0.98
For gas sent to an unlit flare, η is zero.

V_a = volume of gas sent to combustion unit during the year (cf)

Y_j = mole fraction of gas hydrocarbon constituents j:

Constituent j, Methane =	0.0000	(Client gas analysis)
Constituent j, Ethane =	0.0000	
Constituent j, Propane =	0.0000	
Constituent j, Butane =	0.18570	
Constituent j, Pentanes Plus =	0.8143	

R_j = number of carbon atoms in the gas hydrocarbon constituent j:

Constituent j, Methane =	1
Constituent j, Ethane =	2
Constituent j, Propane =	3
Constituent j, Butane =	4
Constituent j, Pentanes Plus =	5

Step 4. Calculate GHG volumetric emissions at standard conditions (scf).

$$E_{s,n} = \frac{E_{a,n} * (459.67 + T_s) * P_a}{(459.67 + T_a) * P_s}$$ *(Equation W-33)*

where:

$E_{s,n}$ = GHG i volumetric emissions at standard temperature and pressure (STP) in cubic feet

$E_{a,n}$ = GHG i volumetric emissions at actual conditions (cf)

T_s = Temperature at standard conditions (F) = 60 F
(Based on Annual Avg Max Temperature for Hobbs, NM from Western Regional Climate Center)

T_a = Temperature at actual conditions (F) = 76 F

P_s = Absolute pressure at standard conditions (psia) = 14.7 psia

P_a = Absolute pressure at actual conditions (psia) = 12.73 psia (Assumption)

Constant = 459.67 (temperature conversion from F to R)

Table 16

Greenhouse Gas Emissions from Combustion Sources
Roadrunner Gas Processing Plant
Lucid Energy Delaware, LLC

Step 5. Calculate annual CH_4 and CO_2 mass emissions (ton).

$Mass_{s,i} = E_{s,i} * \rho_i * 0.001 * 1.1023$ *(Equation W-36)*

where:

$Mass_{s,i}$ = GHG i (CO_2, CH_4, or N_2O) mass emissions at standard conditions in tons (tpy)

$E_{s,i}$ = GHG i (CO_2, CH_4, or N_2O) volumetric emissions at standard conditions (cf)

ρ_i = Density of GHG i. Use:

CH_4:	0.0192	kg/ft^3 (at 60F and 14.7 psia)
CO_2:	0.0526	kg/ft^3 (at 60F and 14.7 psia)

1×10^{-3} = conversion factor from kg to metric tons.

1.1203 = conversion factor from metric tons to short tons.

Step 6. Calculate annual N_2O emissions from portable or stationary fuel combustion sources under actual conditions (cf) using Equation W-40 .

$Mass_{N2O} = 0.001 * Fuel * HHV * EF * 1.1023$ *(Equation W-40)*

where:

$Mass_{N2O}$ = annual N_2O emissions from combustion of a particular type of fuel (tons).

Fuel = mass or volume of the fuel combusted

HHV = high heat value of the fuel

SSM flaring gas HHV =	0.00107	MMBtu/scf
EF =	1.00E-04	kg N_2O/MMBtu

1×10^{-3} = conversion factor from kg to metric tons.

1.1203 = conversion factor from metric tons to short tons.

Step 7. Calculate total annual emission from flare by summing Equations W-40, W-19, W-20, and W-21.

Gas Sent to Combuster	Gas Sent to Combuster (cf/yr)	CH_4 Un-Combusted, $E_{a,CH4}$ (cf)	CO_2 Un-Combusted, $E_{a,CO2}$ (cf)	CO_2 Combusted, $E_{a,CO2}$ (cf)	CH_4 Un-Combusted, $E_{a,CH4}$ (scf)	CO_2 Un-Combusted, $E_{a,CO2}$ (scf)	CO_2 Combusted, $E_{a,CO2}$ (scf)	CH_4 Un-Combusted, $E_{a,CH4}$ (tpy)	CO_2 Un-Combusted, $E_{a,CO2}$ (tpy)	CO_2 Combusted, $E_{a,CO2}$ (tpy)	N_2O Mass Emissions (tpy)	CO2e (tpy)
COMB-1	1,183,925	18,592	15,141	5,585,770	15,610	12,713	4,690,091	0.33	0.74	271.94	0.00014	281
Total	**1,183,925**	**18,592**	**15,141.2**	**5,585,770**	**15,610**	**12,713.3**	**4,690,091**	**0.3**	**0.7**	**271.9**	**0.00014**	**281**

	CO_2	CH_4	N_2O
GWP	1	25	298

Section 7

Information Used To Determine Emissions

Information Used to Determine Emissions shall include the following:

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

The following information was used to determine emissions:

1. ProMax Simulation: The output file from the simulationswas used to produce gas and liquid characteristics for all streams;
2. Tank Emissions: A spreadsheet was used to calculate working, standing and breathing losses at the ten storage tanks. Flash emissions do not occur at the tanks;
3. Inlet gas analytical specifications; all AP-42 sections showing emission factors used, including for natural gas combustion; industrial flares; and submerged-fill truck loading; and EPA leak factors;
4. Amine Heater Emission Factors show vendor performance data for EP-3A, EP-3B;
5. 40 CFR 98_Table C-1 presents the greenhouse gas emissions factors used in this analysis;
6. 40 CFR 98_Table C-2 presents the default greenhouse gas CO_2 conversion factors for methane and N_2O.

Certificate of Analysis

Number: 5030-19110424-001A

Midland Laboratory
2200 East I-20
Midland, TX 79706
Phone 432-689-7252

Lucid Energy Group
416 E. Main St.
Artesia, NM 88210

Nov. 21, 2019

Station Name: ROAD RUNNER INLET
Method: GPA 2286
Cylinder No: A102
Analyzed: 11/20/2019 19:30:36 by WH

Sampled By: DEREK SAUDER
Sample Of: Gas Spot
Sample Date: 11/19/2019
Sample Conditions: 797.5 psig, @ 75 °F

Analytical Data

Components	Mol. %	Wt. %	GPM at 14.696 psia		
Hydrogen Sulfide	0.000	0.000		GPM TOTAL C2+	5.985
Nitrogen	1.397	1.840		GPM TOTAL C3+	2.710
Carbon Dioxide	0.330	0.683		GPM TOTAL iC5+	0.409
Methane	76.983	58.062			
Ethane	12.234	17.295	3.275		
Propane	5.668	11.750	1.563		
Iso-butane	0.717	1.959	0.235		
n-Butane	1.595	4.358	0.503		
Iso-pentane	0.287	0.973	0.105		
n-Pentane	0.288	0.977	0.105		
Hexanes Plus	0.501	2.103	0.199		
	100.000	100.000	5.985		

Calculated Physical Properties	**Total**	**C6+**
Relative Density Real Gas	0.7367	3.0526
Calculated Molecular Weight	21.27	88.41
Compressibility Factor	0.9964	
GPA 2172 Calculation:		
Calculated Gross BTU per ft³ @ 14.696 psia & 60°F		
Real Gas Dry BTU	1264	4785
Water Sat. Gas Base BTU	1242	4701

Hydrocarbon Laboratory Manager

Quality Assurance: The above analyses are performed in accordance with ASTM, UOP, GPA guidelines for quality assurance, unless otherwise stated.

Midland Laboratory
2200 East I-20
Midland, TX 79706
Phone 432-689-7252

Certificate of Analysis

Number: 5030-19110424-001A

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416 E. Main St.
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Sampled By: DEREK SAUDER
Sample Of: Gas Spot
Sample Date: 11/19/2019
Sample Conditions: 797.5 psig, @ 75 °F

Analytical Data

Components	Mol. %	Wt. %	GPM at 14.696 psia		
Hydrogen Sulfide	0.000	0.000		GPM TOTAL C2+	5.9850
Nitrogen	1.397	1.840		GPM TOTAL C3+	2.7100
Methane	76.983	58.062		GPM TOTAL iC5+	0.4090
Carbon Dioxide	0.330	0.683			
Ethane	12.234	17.295	3.275		
Propane	5.668	11.750	1.563		
Iso-Butane	0.717	1.959	0.235		
n-Butane	1.595	4.358	0.503		
Iso-Pentane	0.287	0.973	0.105		
n-Pentane	0.288	0.977	0.105		
Hexanes	0.284	1.122	0.113		
Heptanes Plus	0.217	0.981	0.086		
	100.000	100.000	5.985		

Calculated Physical Properties	Total	C7+
Relative Density Real Gas	0.7367	3.1977
Calculated Molecular Weight	21.27	92.61
Compressibility Factor	0.9964	
GPA 2172 Calculation:		
Calculated Gross BTU per ft³ @ 14.696 psia & 60°F		
Real Gas Dry BTU	1263.6	4913.3
Water Sat. Gas Base BTU	1241.5	4827.6

Hydrocarbon Laboratory Manager

Quality Assurance: The above analyses are performed in accordance with ASTM, UOP, GPA guidelines for quality assurance, unless otherwise stated.

Midland Laboratory
2200 East I-20
Midland, TX 79706
Phone 432-689-7252

Certificate of Analysis

Number: 5030-19110424-001A

Lucid Energy Group
416 E. Main St.
Artesia, NM 88210

Nov. 21, 2019

Station Name: ROAD RUNNER INLET
Method: GPA 2286
Cylinder No: A102
Analyzed: 11/20/2019 19:30:36 by WH

Sampled By: DEREK SAUDER
Sample Of: Gas Spot
Sample Date: 11/19/2019
Sample Conditions: 797.5 psig, @ 75 °F

Analytical Data

Components	Mol. %	Wt. %	GPM at 14.696 psia
Nitrogen	1.397	1.840	
Methane	76.983	58.062	
Carbon Dioxide	0.330	0.683	
Hydrogen Sulfide	NIL	NIL	
Ethane	12.234	17.295	3.275
Propane	5.668	11.750	1.563
Iso-Butane	0.717	1.959	0.235
n-Butane	1.595	4.358	0.503
Iso-Pentane	0.287	0.973	0.105
n-Pentane	0.288	0.977	0.105
i-Hexanes	0.179	0.700	0.070
n-Hexane	0.105	0.422	0.043
Benzene	0.017	0.062	0.005
Cyclohexane	0.048	0.190	0.016
i-Heptanes	0.091	0.387	0.036
n-Heptane	0.017	0.079	0.008
Toluene	0.007	0.029	0.002
i-Octanes	0.034	0.174	0.016
n-Octane	0.002	0.012	0.001
Ethylbenzene	NIL	0.001	NIL
Xylenes	NIL	0.007	0.001
i-Nonanes	0.001	0.016	0.001
n-Nonane	NIL	0.004	NIL
i-Decanes	NIL	0.008	NIL
n-Decane	NIL	0.002	NIL
Undecanes	NIL	0.002	NIL
Dodecanes	NIL	0.002	NIL
Tridecanes	NIL	0.005	NIL
Tetradecanes Plus	NIL	0.001	NIL
	100.000	100.000	5.985

GPM TOTAL C2+ 5.985

Calculated Physical Properties	Total	C14+
Relative Density Real Gas	0.7367	NIL
Calculated Molecular Weight	21.271	NIL
Compressibility Factor	0.9964	
GPA 2172 Calculation:		
Calculated Gross BTU per ft³ @ 14.696 psia & 60°F		
Real Gas Dry BTU	1263.6	NIL
Water Sat. Gas Base BTU	1241.5	NIL

Hydrocarbon Laboratory Manager

Quality Assurance: The above analyses are performed in accordance with ASTM, UOP, GPA guidelines for quality assurance, unless otherwise stated.

Bryan Research & Engineering, LLC

ProMax® 5.0

Simulation Report

Project: Roadrunner I_II_III_IV 880MM_EHSR (2.15.2020) CASE I.pmx

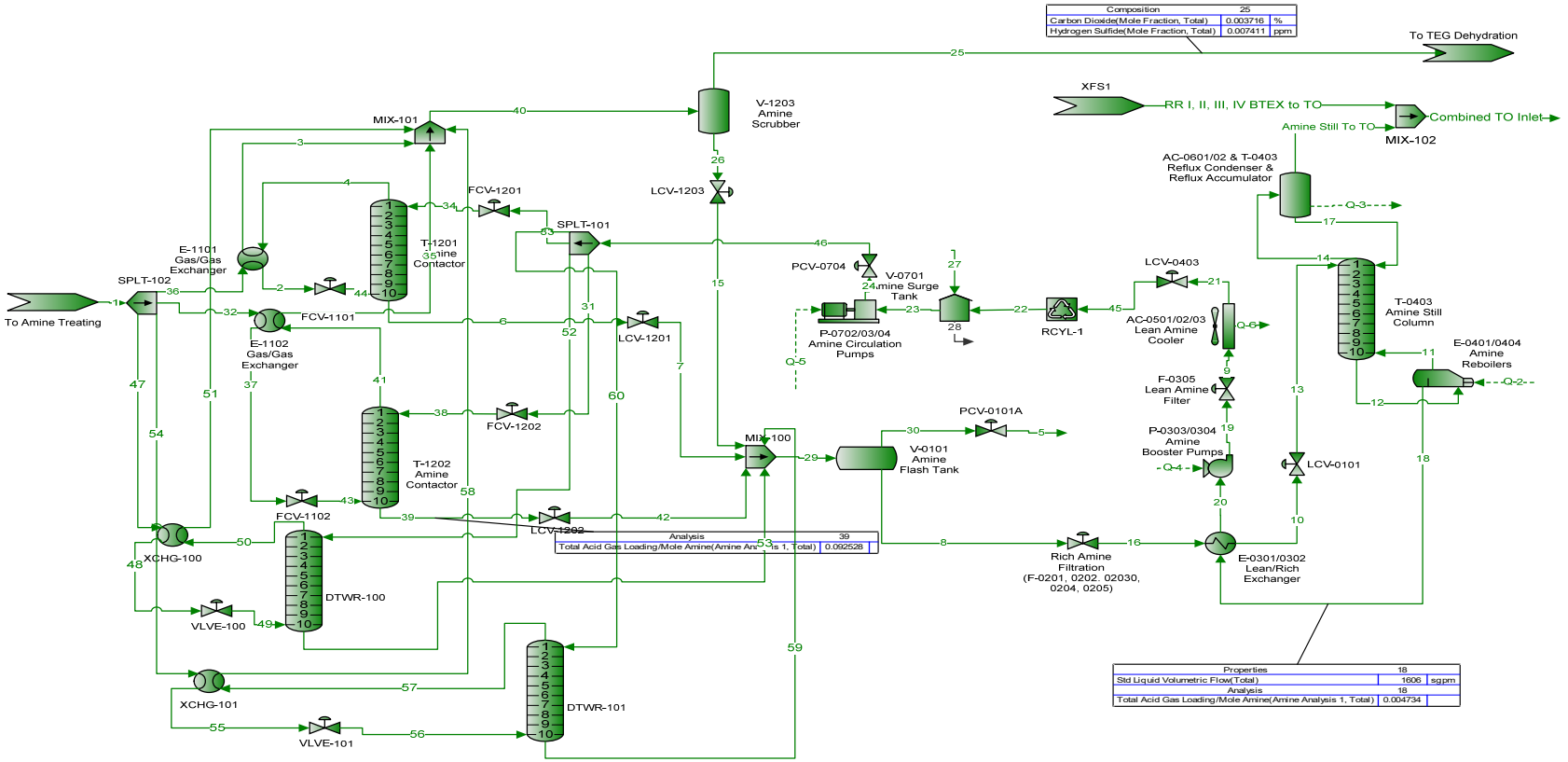
Licensed to Lucid Energy Group II, LLC and Affiliates

Client Name: Lucid Energy
Location: Loving, New Mexico
Job: Roadrunner 200MM Cryo Plant

ProMax Filename: C:\Users\CKassen\Documents\Projects\1_Plants\RoadRunner\Roadrunner II\Roadrunner I_II_III_IV 880MM_EHSR (2.15.2020) CASE I.pmx
ProMax Version: 5.0.19050.0
Simulation Initiated: 2/15/2020 12:36:50 PM

Bryan Research & Engineering, LLC
Chemical Engineering Consultants
P.O. Box 4747 Bryan, Texas 77805
Office: (979) 776-5220
FAX: (979) 776-4818
mailto:sales@bre.com
http://www.bre.com/

Report Navigator can be activated via the ProMax Navigator Toolbar.
An asterisk (*), throughout the report, denotes a user specified value.
A question mark (?) after a value, throughout the report, denotes an extrapolated or approximate value.


Composition 25
Carbon Dioxide(Mole Fraction, Total) 0.003716 %
Hydrogen Sulfide(Mole Fraction, Total) 0.007411 ppm
To TEG Dehydration
25
XFS1
RR I, II, III, IV BTEX to TO
Combined TO Inlet
MIX-102
Amine Still To TO
V-1203 Amine Scrubber
MIX-101
40
3
4
26
LCV-1203
FCV-1201
34
SPLT-101
53
46
AC-0601/02 & T-0403 Reflux Condenser & Reflux Accumulator
Q-3
17
14
E-1101 Gas/Gas Exchanger
SPLT-102
36
1
2
44
T-1201 Amine Contactor
35
PCV-0704
V-0701 Amine Surge Tank
24
27
LCV-0403
21
T-0403 Amine Still Column
To Amine Treating
32
FCV-1101
6
31
52
LCV-1201
15
P-0702/03/04 Amine Circulation Pumps
23
22
45
RCYL-1
AC-0501/02/03 Lean Amine Cooler
Q-6
E-0401/0404 Amine Reboilers
Q-2
11
E-1102 Gas/Gas Exchanger
37
41
7
Q-5
28
9
F-0305 Lean Amine Filter
13
47
51
60
38
FCV-1202
PCV-0101A
30
5
MIX-100
29
V-0101 Amine Flash Tank
P-0303/0304 Amine Booster Pumps
19
Q-4
LCV-0101
12
18
54
T-1202 Amine Contactor
43
FCV-1102
39
LCV-1202
42
58
20
10
50
XCHG-100
48
Analysis 39
Total Acid Gas Loading/Mole Amine(Amine Analysis 1, Total) 0.092528
53
8
16
Rich Amine Filtration (F-0201, 0202, 02030, 0204, 0205)
E-0301/0302 Lean/Rich Exchanger
DTWR-100
VLVE-100
49
Properties 18
Std Liquid Volumetric Flow(Total) 1606 sgpm
Analysis 18
Total Acid Gas Loading/Mole Amine(Amine Analysis 1, Total) 0.004734
59
XCHG-101
57
DTWR-101
55
VLVE-101
56

From: Ben Ciotti [mailto:bciotti@resetenergy.com]
Sent: Monday, July 24, 2017 3:14 PM
To: McAfee, Grant <GMcAfee@lucid-energy.com>; Middleton, Chris <CMiddleton@lucid-energy.com>
Subject: RE: Amine Heaters @ Red Hills

Here is what I received:

High Fire

NOx - < 30 ppmvd

CO - < 100 ppmvd

The high fire figures listed are parts per million by volume on a dry basis corrected to 3% O2. Please note these figures are ratios. Even though the ratio figures may increase with turndown, the calculated finite value at high fire will not be exceeded at any point within requirements.

Thanks,

Ben Ciotti
Reset Energy
Process Engineer
432-248-1030 - Cell #
bciotti@resetenergy.com
www.resetenergy.com

ELECTRONIC CODE OF FEDERAL REGULATIONS

e-CFR data is current as of August 23, 2017

Title 40: Protection of Environment
PART 98—MANDATORY GREENHOUSE GAS REPORTING
Subpart C—General Stationary Fuel Combustion Sources

Table C-1 to Subpart C of Part 98—Default CO_2 Emission Factors and High Heat Values for Various Types of Fuel

Link to an amendment published at 81 FR 89252, Dec. 9, 2016.

Default CO_2 Emission Factors and High Heat Values for Various Types of Fuel

Fuel type	Default high heat value	Default CO_2 emission factor
Coal and coke	mmBtu/short ton	kg CO_2/mmBtu
Anthracite	25.09	103.69
Bituminous	24.93	93.28
Subbituminous	17.25	97.17
Lignite	14.21	97.72
Coal Coke	24.80	113.67
Mixed (Commercial sector)	21.39	94.27
Mixed (Industrial coking)	26.28	93.90
Mixed (Industrial sector)	22.35	94.67
Mixed (Electric Power sector)	19.73	95.52
Natural gas	mmBtu/scf	kg CO_2/mmBtu
(Weighted U.S. Average)	1.026×10^{-3}	53.06
Petroleum products	mmBtu/gallon	kg CO_2/mmBtu
Distillate Fuel Oil No. 1	0.139	73.25
Distillate Fuel Oil No. 2	0.138	73.96
Distillate Fuel Oil No. 4	0.146	75.04
Residual Fuel Oil No. 5	0.140	72.93
Residual Fuel Oil No. 6	0.150	75.10
Used Oil	0.138	74.00
Kerosene	0.135	75.20
Liquefied petroleum gases (LPG)[1]	0.092	61.71
Propane[1]	0.091	62.87
Propylene[2]	0.091	67.77
Ethane[1]	0.068	59.60
Ethanol	0.084	68.44
Ethylene[2]	0.058	65.96
Isobutane[1]	0.099	64.94
Isobutylene[1]	0.103	68.86
Butane[1]	0.103	64.77
Butylene[1]	0.105	68.72
Naphtha (<401 deg F)	0.125	68.02
Natural Gasoline	0.110	66.88
Other Oil (>401 deg F)	0.139	76.22
Pentanes Plus	0.110	70.02
Petrochemical Feedstocks	0.125	71.02
Petroleum Coke	0.143	102.41
Special Naphtha	0.125	72.34
Unfinished Oils	0.139	74.54
Heavy Gas Oils	0.148	74.92
Lubricants	0.144	74.27
Motor Gasoline	0.125	70.22
Aviation Gasoline	0.120	69.25
Kerosene-Type Jet Fuel	0.135	72.22
Asphalt and Road Oil	0.158	75.36
Crude Oil	0.138	74.54
Other fuels—solid	mmBtu/short ton	kg CO_2/mmBtu
Municipal Solid Waste	9.95[3]	90.7
Tires	28.00	85.97
Plastics	38.00	75.00

Petroleum Coke	30.00	102.41
Other fuels—gaseous	mmBtu/scf	kg CO_2/mmBtu
Blast Furnace Gas	0.092×10^{-3}	274.32
Coke Oven Gas	0.599×10^{-3}	46.85
Propane Gas	2.516×10^{-3}	61.46
Fuel Gas[4]	1.388×10^{-3}	59.00
Biomass fuels—solid	mmBtu/short ton	kg CO_2/mmBtu
Wood and Wood Residuals (dry basis)[5]	17.48	93.80
Agricultural Byproducts	8.25	118.17
Peat	8.00	111.84
Solid Byproducts	10.39	105.51
Biomass fuels—gaseous	mmBtu/scf	kg CO_2/mmBtu
Landfill Gas	0.485×10^{-3}	52.07
Other Biomass Gases	0.655×10^{-3}	52.07
Biomass Fuels—Liquid	mmBtu/gallon	kg CO_2/mmBtu
Ethanol	0.084	68.44
Biodiesel (100%)	0.128	73.84
Rendered Animal Fat	0.125	71.06
Vegetable Oil	0.120	81.55

[1]The HHV for components of LPG determined at 60 °F and saturation pressure with the exception of ethylene.

[2]Ethylene HHV determined at 41 °F (5 °C) and saturation pressure.

[3]Use of this default HHV is allowed only for: (a) Units that combust MSW, do not generate steam, and are allowed to use Tier 1; (b) units that derive no more than 10 percent of their annual heat input from MSW and/or tires; and (c) small batch incinerators that combust no more than 1,000 tons of MSW per year.

[4]Reporters subject to subpart X of this part that are complying with §98.243(d) or subpart Y of this part may only use the default HHV and the default CO_2 emission factor for fuel gas combustion under the conditions prescribed in §98.243(d)(2)(i) and (d)(2)(ii) and §98.252(a)(1) and (a)(2), respectively. Otherwise, reporters subject to subpart X or subpart Y shall use either Tier 3 (Equation C-5) or Tier 4.

[5]Use the following formula to calculate a wet basis HHV for use in Equation C-1: $HHV_w = ((100 - M)/100)*HHV_d$ where HHV_w = wet basis HHV, M = moisture content (percent) and HHV_d = dry basis HHV from Table C-1.

[78 FR 71950, Nov. 29, 2013]

Title 40: Protection of Environment
PART 98—MANDATORY GREENHOUSE GAS REPORTING
Subpart C—General Stationary Fuel Combustion Sources

TABLE C-2 TO SUBPART C OF PART 98—DEFAULT CH_4 AND N_2O EMISSION FACTORS FOR VARIOUS TYPES OF FUEL

Link to an amendment published at 81 FR 89252, Dec. 9, 2016.

Fuel type	Default CH_4 emission factor (kg CH_4/mmBtu)	Default N_2O emission factor (kg N_2O/mmBtu)
Coal and Coke (All fuel types in Table C-1)	1.1×10^{-02}	1.6×10^{-03}
Natural Gas	1.0×10^{-03}	1.0×10^{-04}
Petroleum (All fuel types in Table C-1)	3.0×10^{-03}	6.0×10^{-04}
Fuel Gas	3.0×10^{-03}	6.0×10^{-04}
Municipal Solid Waste	3.2×10^{-02}	4.2×10^{-03}
Tires	3.2×10^{-02}	4.2×10^{-03}
Blast Furnace Gas	2.2×10^{-05}	1.0×10^{-04}
Coke Oven Gas	4.8×10^{-04}	1.0×10^{-04}
Biomass Fuels—Solid (All fuel types in Table C-1, except wood and wood residuals)	3.2×10^{-02}	4.2×10^{-03}
Wood and wood residuals	7.2×10^{-03}	3.6×10^{-03}
Biomass Fuels—Gaseous (All fuel types in Table C-1)	3.2×10^{-03}	6.3×10^{-04}
Biomass Fuels—Liquid (All fuel types in Table C-1)	1.1×10^{-03}	1.1×10^{-04}

Note: Those employing this table are assumed to fall under the IPCC definitions of the “Energy Industry” or “Manufacturing Industries and Construction”. In all fuels except for coal the values for these two categories are identical. For coal combustion, those who fall within the IPCC “Energy Industry” category may employ a value of 1g of CH_4/mmBtu.

[78 FR 71952, Nov. 29, 2013]

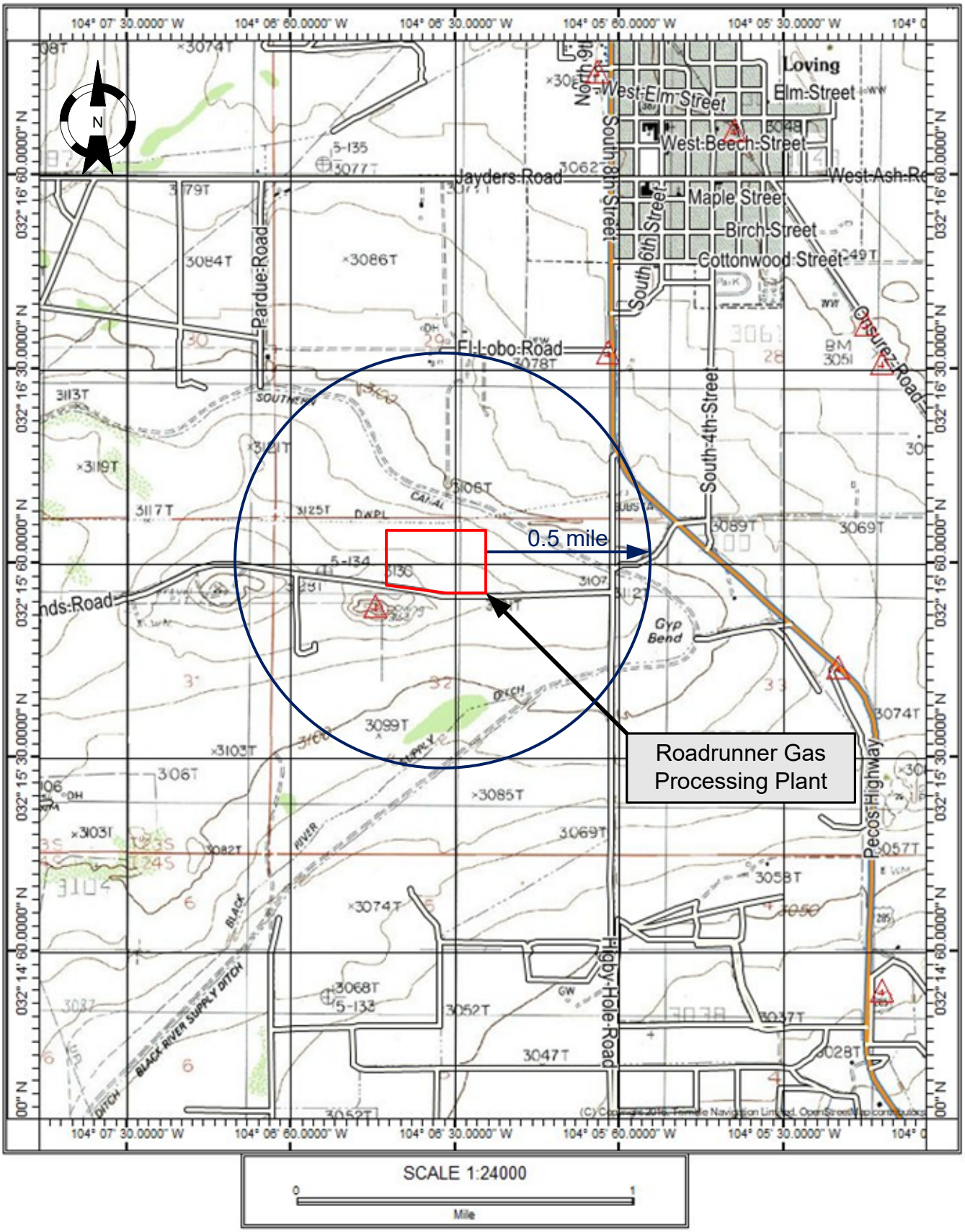
Section 8

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	

An are map is included on the following page.



ALLIANT ENVIRONMENTAL, LLC	**Area Map**	**Lucid Energy Delaware, LLC**

Scale:	Drawn by:	Date:		Project No.:	File Name:	Figure:
1:24,000	MDF	4/8/2020	**Roadrunner Gas Processing Plant** N 32° 15' 56.71" Latitude W 104° 6' 29.97" Longitude	097-002	**Roadrunner Figures**	Section 8
	Chk'd by:	Date:				

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. **X** A copy of the certified letter receipts with post marks (20.2.72.203.B NMAC) **See note below**
2. **X** 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. **X** A copy of the property tax record (20.2.72.203.B NMAC).
4. **X** A sample of the letters sent to the owners of record. **See note below**
5. **X** A sample of the letters sent to counties, municipalities, and Indian tribes. **See note below**
6. **X** A sample of the public notice posted and a verification of the local postings.
7. **X** A table of the noticed citizens, counties, municipalities and tribes and to whom the notices were sent in each group.
8. **X** A copy of the public service announcement (PSA) sent to a local radio station and documentary proof of submittal.
9. **X** 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. **X** 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. **X** 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.

Note:
In light of the New Mexico Governor's Extended Stay-At-Home orders due to the COVID-19 virus pandemic, Mr. Ted Schooley, Permit Programs Section Chief, New Mexico Environment Department Air Quality Bureau, agreed that in lieu of mailing the 23 letters via certified mail through the post office, pictures of the stamped envelops addressed to the recipients listed below and a copy of the public notice letter addressed to these individuals, would be acceptable. Mr. Schooley's e-mail is attached.

Lucid Road Runner Gas Plant Public Notice List:

Name	Mailing Address	Category of Notice
ZUNIGA, RYAN M	24 Mesquite Lane Artesia, NM 88210	Nearby Landowner
MCDONALD, HENRY	PO Box 597 Loving, NM 88256-0597	Nearby Landowner
BLACKMON, SUSAN D & BLACKMON, JOHN E	3501 BONNIEBROOK DR Plano, TX 75075	Nearby Landowner
HUFFER, GEORGE A	1473 ROYAL PALM DR Slidell, LA 70458	Nearby Landowner
ONSUREZ, CONCEPCION C	PO BOX 393 Loving, NM 88256	Nearby Landowner
OGDEN ESTATE HEIRS	2302 FOREHAND RD Carlsbad, NM 88220	Nearby Landowner
HERNANDEZ, PABLO & MARIA REV TRUST HERNANDEZ, PABLO P & MARIA Q TRUSTEES	1971 PECOS HWY Loving, NM 88256	Nearby Landowner
PINA, REYMUNDO & VICTORIA (JT)	PO BOX 356 Loving, NM 88256	Nearby Landowner
ONSUREZ, JOEL SANTOS	PO BOX 1058 Loving, NM 88256	Nearby Landowner
ONSUREZ, ANTONIO C & GLORIA S	PO BOX 598 Loving, NM 88256	Nearby Landowner
PARDUE LIMITED COMPANY	PO BOX 2018 Carlsbad, NM 88221	Nearby Landowner
BALLARD, MITCHELL & WENDY	273 HIGBY HOLE RD Loving, NM 88256	Nearby Landowner
ZUNIGA, JOSE D & ELISA (N- JT)	211 W FIESTA DR Carlsbad, NM 88220	Nearby Landowner
SOUTHWESTERN PUBLIC SERVICE CO ATTN: PROPERTY TAX DEPT	PO BOX 1979 Denver, CO 80201	Nearby Landowner
BALLARD, PARKER & WHITNEY (N-JT)	PO BOX 716 Loving, NM 88256	Nearby Landowner
ONSUREZ, DAMIAN S & CYNTHIA KAY (JT)	PO BOX 1088 Carlsbad, NM 88221	Nearby Landowner
WYRICK, GERALDINE M	3101 SEXTON DRIVE Norman, OK 73026	Nearby Landowner
CALDERON, FELIX & DEBRA (JT)	PO BOX 64 Loving, NM 88256	Nearby Landowner
CONNALLY, VICKIE	125 BRINKLEY LN Elgin, TX 78621	Nearby Landowner
SOOBY, F W MRS	921 MONTCREST DR Redding, CA 96003	Nearby Landowner
STATE OF NEW MEXICO	310 OLD SANTA FE TRAIL Santa Fe, NM 87504	Nearby Landowner
Eddy County Manger Allen R. Davis	101 W Greene Street, Suite 110 Carlsbad, NM 88220	County and Nearby Landowner
Village of Loving, NM Mayor Pete H. Estrada	PO Box 56 Loving, NM 88256	Municipality and Nearby Landowner

Newspaper:

Carlsbad Current-Argus
Classified section: (800) 473-0088 weekdays from 7:00 am until 4:00 pm
classifieds@currentargus.com
legals@currentargus.com

Published on Friday April 10, 2020.

Radio:

Carlsbad Radio - KAMQ/ESPN-AM, KATK-AM
PO Box 1538
Carlsbad, NM 88220
Phone: 575-887-7563
Fax: 575-887-7000

Sales Manager - Don Hughes
Cell Phone: 575-302-3803
don@carlsbadradio.com

Sent request for PSA on 4/7/2020 to Debbie Thomas carlsbadradiotraffic@gmail.com, PSA was aired April 10, 2020.

Postings:

- Plant Entrance
- Allsup's Convivence Store: 105 N. 8th Loving, NM 88256
- Village of Loving City Hall and Police Department: 415 W. Cedar Street Loving, NM 88256
- Loving USPS: 402 W. Beech Street Loving, NM 88256

Timestamp

4/8/2020 16:49:43 (CDT)

Publication Date

4/10/2020 0:00:00 (CDT)

Ad Number

GCI0404291 & GCI0404300

Publication

Carlsbad Current Argus

Special Requests

Affidavits for Two Display ads - GCI0404291 & GCI0404300 - they are identical ads run in legal and main section

Market

New Mexico

Delivery Method

Both

Number of Affidavits Needed

1

Customer Email

mfetman@alliantenv.com

Customer Name

Alliant Environmental LLC

Customer Phone Number

(505) 205-4819

Customer Address

7804 Pan American Fwy. NE, Suite 5, Albuquerque, NM 87109

Account Number (If Known)

171048

Name

Martin Schluep

Street

6010 La Paz Road

City

Rio Rancho

State

NM

ZIP Code

87144

Your Name

Amirtha Sargunam

Email Address

asathisarg@gannett.com

CARLSBAD
CURRENT-ARGUS

AFFIDAVIT OF PUBLICATION

Ad No.
GCI0404300

ALLIANT ENVIRONMENTAL LLC
7804 PAN AMERICAN FWY. NE SUITE 5
ALBUQUERQUE, NM 87109

I, a legal clerk of the Carlsbad Current-Argus, a newspaper published daily at the City of Carlsbad, in said county of Eddy, state of New Mexico and of general paid circulation in said county; that the same is a duly qualified newspaper under the laws of the State wherein legal notices and advertisements may be published; that the printed notice attached hereto was published in the regular and entire edition of said newspaper and not in supplement thereof on the date as follows, to wit:

4/10/2020

Legal Clerk

Subscribed and sworn before me this
10TH of APRIL 2020

State of WI, County of Brown
NOTARY PUBLIC

8-25-23
My Commission Expires

Ad#: GCI0404300
P O : NOTICE OF AIR QUALITY PERMIT APPLICATION
# of Affidavits :1

SHELLY HORA
Notary Public
State of Wisconsin

NOTICE OF AIR QUALITY PERMIT APPLICATION

Lucid Energy Delaware, LLC announces its application to the New Mexico Environment Department for an air quality permit for the **modification** of its **Road Runner Gas Processing Plant**. The expected date of application submittal to the Air Quality Bureau is **April 23, 2020**.

The exact location for the proposed facility is at latitude **32** deg, 15 min, **56.71** sec and longitude **-104** deg, **6** min, **29.97** sec. The approximate location of this facility is **1.7** miles sout-west of Loving in Eddy County, New Mexico

The proposed **modification** of the facility includes updating NSR Permit 7200-M2 based on the most current plans and expanding the plant by adding two additional processing trains. 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_{10}	2.61 pph	11.2 tpy
$PM_{2.5}$	2.52 pph	10.8 tpy
Sulfur Dioxide (SO2)	5.19 pph	22.7 tpy
Nitrogen Oxides (NOx)	2,695 pph	130.8 tpy
Carbon Monoxide (CO)	12,195 pph	230.1 tpy
Volatile Organic Compounds (VOC)	8,930 pph	176.8 tpy
Total sum of all Hazardous Air Pollutants (HAPs)	99.6 pph	4.4 tpy
Toxic Air Pollutant (TAP)	n/a pph	n/a tpy
Green House Gas Emissions as Total CO2e	n/a	290,743 tpy

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

The owner and/or operator of the Facility is: **Lucid Energy Delaware, LLC, PO Box 158, Artesia, NM 88210**
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; (505) 476-4300; 1 800 224-7009; https://www.env.nm.gov/aqb/permit/aqb_draft_permits.html. Other comments and questions may be submitted verbally.
With your comments, please refer to the company name and facility name, or send a copy of this notice along with your comments. This information is necessary since the Department may have not yet received the permit application. Please include a legible return mailing address. Once the Department has completed its preliminary review of the application and its air quality impacts, the Department's notice will be published in the legal section of a newspaper circulated near the facility location.

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 505-476-5557.

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: Kristine Yurdin, Non-Discrimination Coordinator, NMED, 1190 St. Francis Dr., Suite N4050, P.O. Box 5469, Santa Fe, NM 87502, (505) 827-2855, nd.coordinator@state.nm.us. 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.

CARLSBAD
CURRENT-ARGUS

AFFIDAVIT OF PUBLICATION

Ad No.
GCI0404291

ALLIANT ENVIRONMENTAL LLC
7804 PAN AMERICAN FWY. NE SUITE 5
ALBUQUERQUE, NM 87109

I, a legal clerk of the Carlsbad Current-Argus, a newspaper published daily at the City of Carlsbad, in said county of Eddy, state of New Mexico and of general paid circulation in said county; that the same is a duly qualified newspaper under the laws of the State wherein legal notices and advertisements may be published; that the printed notice attached hereto was published in the regular and entire edition of said newspaper and not in supplement thereof on the date as follows, to wit:

4/10/2020

Legal Clerk

Subscribed and sworn before me this
10TH of APRIL 2020

State of WI, County of Brown
NOTARY PUBLIC

8-25-23
My Commission Expires

Ad#: GCI0404291
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# of Affidavits :1

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Total sum of all Hazardous Air Pollutants (HAPs)	99.6 pph	4.4 tpy
Toxic Air Pollutant (TAP)	n/a pph	n/a tpy
Green House Gas Emissions as Total CO2e	n/a	290,743 tpy

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mschluep@alliantenv.com

From: Schooley, Ted, NMENV <ted.schooley@state.nm.us>
Sent: Tuesday, April 7, 2020 3:28 PM
To: mschluep@alliantenv.com; Olson, Kirby, NMENV
Cc: 'Matthew Eales'; 'Melissa Fetman'
Subject: RE: [EXT] Permit Application Certified Letters

Mr. Schluep,
In light of the Governor's Extended Stay-At-Home orders, this is an acceptable solution to resolve your concerns. Be careful and be safe. Provide feedback on how this works for you so we can adjust and/or revise our guidance to others in your situation. Please include a copy of this e-mail in the public notice section of your application to alert the permit specialist of this procedural approval.

Ted

Olqn#vr#kh Iqgxvwu|2Frqvxowdqw#Ehhgedfn#Fxhwwlrqgdlu#

#

Whg#Vfkrrdh|#
Permit Programs Section Chief
New Mexico Environment Department
Air Quality Bureau
525 Camino de los Marquez, Suite 1, Santa Fe, NM 87505
Office: (505) 476-4334
ted.schooley@state.nm.us
https://www.env.nm.gov/air-quality/

"Innovation, Science, Collaboration, Compliance"

From: mschluep@alliantenv.com <mschluep@alliantenv.com>
Sent: Tuesday, April 7, 2020 3:07 PM
To: Olson, Kirby, NMENV <Kirby.Olson@state.nm.us>; Schooley, Ted, NMENV <ted.schooley@state.nm.us>
Cc: 'Matthew Eales' <MEales@lucid-energy.com>; 'Melissa Fetman' <mfetman@alliantenv.com>
Subject: [EXT] Permit Application Certified Letters

Dear Kirby and Ted,

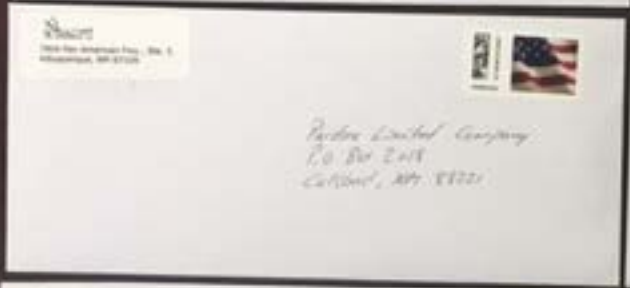
We are preparing the public notices for the Lucid Energy Road Runner Gas Plant permit revision application. There are 25 letters we will mail out. I don't feel comfortable right now going to the post office to have 25 letters mailed certified mail. Would it be acceptable to NMED if I took pictures of the addressed and stamped envelopes instead of the proving we mailed it with the certified green receipts, in addition to a copy of the letters sent?

Thank you,
Martin

Martin R. Schluep
Alliant Environmental, LLC
7804 Pan American Fwy. NE, Suite 5
Albuquerque, NM 87109

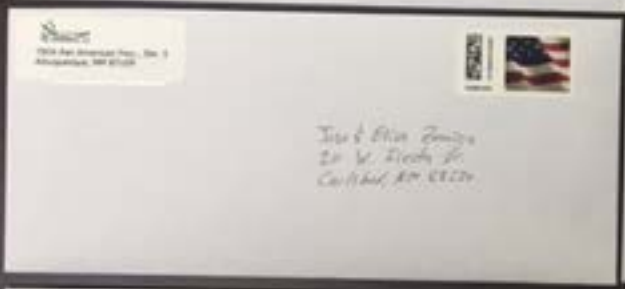
Joel Sanchez Orozco
P.o. Box 458
Lovington, NM 88260

Archuleta Gloria Orozco
P.o. Box 538
Lovington, NM 88260



Ryder Lockard Company
P.O. Box 2448
Carlsbad, NM 88221

M. & W. Ballard
295 Rocky Hill Rd.
Lovington, NM 88260



Jose & Rita Zamora
20 W. Eddy St.
Carlsbad, NM 88220

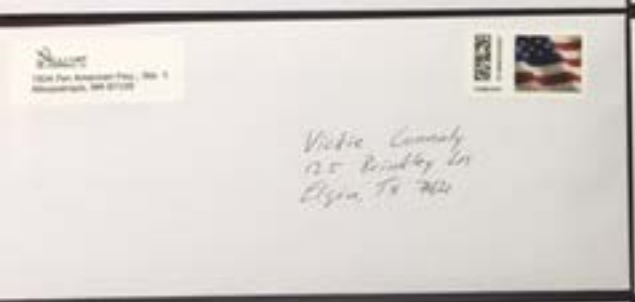
Southwestern Public Service Co.
Attn: Property Tax Department
P.O. Box 1261
Amarillo, TX 79105

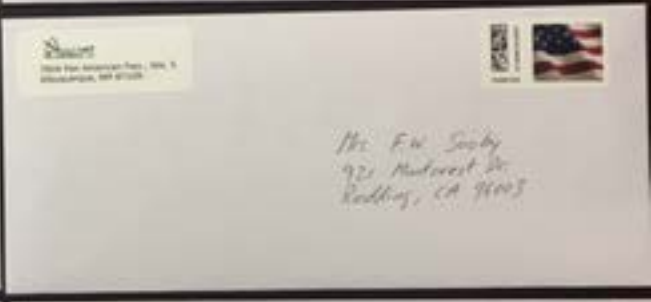
P. & W. Ballard
P.o. Box 716
Lovington, NM 88260

D. & C. Orozco
P.O. Box 1088
Carlsbad, NM 88221


Geraldine Wyrick
710 Sooner Drive
Norman, OK 73026

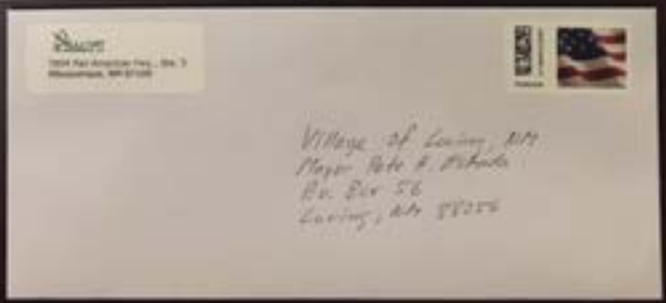

F & D Calderon
P.O. Box 69
Loving, NM 88256


Vickie Connaly
125 Bradley Ln
Elgin, TX 7


Mr. F.W. Seeley
921 Mudrock Dr.
Redding, CA 96003


State of New Mexico
Jo Old Santa Fe Trail
Santa Fe, NM 87504


Eddy County Manager
Mr. Allen R. Davis
101 W. Greene Street, Ste 00
Carlsbad, NM 88220


Village of Loving, NM
Mayor Pete A. Peluso
P.O. Box 56
Loving, NM 88256

April 9, 2020

Dear Ryan Zuniga:

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April 9, 2020

Dear Henry McDonald:

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Total sum of all Hazardous Air Pollutants (HAPs)	99.6 pph	4.4 tpy
Toxic Air Pollutant (TAP)	n/a pph	n/a tpy
Green House Gas Emissions as Total CO_2e	n/a	290,743 tpy

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

The owner and/or operator of the Facility is: **Lucid Energy Delaware, LLC, PO Box 158, Artesia, NM 88210**

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; (505) 476-4300; 1 800 224-7009; https://www.env.nm.gov/aqb/permit/aqb_draft_permits.html. Other comments and questions may be submitted verbally.

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

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Notice of Non-Discrimination
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April 9, 2020

Dear Susan D. and John E. Blackmon:

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The exact location for the proposed facility is at latitude **32** deg, **15** min, **56.71** sec and longitude **-104** deg, **6** min, **29.97** sec. The approximate location of this facility is **1.7** miles sout-west of Loving in Eddy County, New Mexico

The proposed **modification** of the facility includes updating NSR Permit 7200-M2 based on the most current plans and expanding the plant by adding two additional processing trains. 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
Total Suspended Particulates (TSP)	2.61 pph	11.2 tpy
PM_{10}	2.61 pph	11.2 tpy
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Sulfur Dioxide (SO_2)	5.19 pph	22.7 tpy
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Total sum of all Hazardous Air Pollutants (HAPs)	99.6 pph	4.4 tpy
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April 9, 2020

Dear George A. Huffer:

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April 9, 2020

Dear Concepcion C. Onsurez:

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April 9, 2020

Dear Ogden Estate Heirs:

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April 9, 2020

Dear Pablo and Maria Hernandez Trustees:

Lucid Energy Delaware, LLC announces its application to the New Mexico Environment Department for an air quality permit for the **modification** of its **Road Runner Gas Processing Plant.** The expected date of application submittal to the Air Quality Bureau is **April 23, 2020.**

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April 9, 2020

Dear Reymundo and Victoria Pina:

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Dear Joel Santos Onsurez:

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Toxic Air Pollutant (TAP)	n/a pph	n/a tpy
Green House Gas Emissions as Total CO_2e	n/a	290,743 tpy

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

The owner and/or operator of the Facility is: **Lucid Energy Delaware, LLC, PO Box 158, Artesia, NM 88210**

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; (505) 476-4300; 1 800 224-7009; https://www.env.nm.gov/aqb/permit/aqb_draft_permits.html. Other comments and questions may be submitted verbally.

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

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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: Kristine Yurdin, Non-Discrimination Coordinator, NMED, 1190 St. Francis Dr., Suite N4050, P.O. Box 5469, Santa Fe, NM 87502, (505) 827-2855, nd.coordinator@state.nm.us. 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.

April 9, 2020

Dear Antonio C. and Gloria S. Onsurez:

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The exact location for the proposed facility is at latitude **32** deg, **15** min, **56.71** sec and longitude **-104** deg, **6** min, **29.97** sec. The approximate location of this facility is **1.7** miles sout-west of Loving in Eddy County, New Mexico

The proposed **modification** of the facility includes updating NSR Permit 7200-M2 based on the most current plans and expanding the plant by adding two additional processing trains. 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
Total Suspended Particulates (TSP)	2.61 pph	11.2 tpy
PM_{10}	2.61 pph	11.2 tpy
$PM_{2.5}$	2.52 pph	10.8 tpy
Sulfur Dioxide (SO_2)	5.19 pph	22.7 tpy
Nitrogen Oxides (NO_x)	2,695 pph	130.8 tpy
Carbon Monoxide (CO)	12,195 pph	230.1 tpy
Volatile Organic Compounds (VOC)	8,930 pph	176.8 tpy
Total sum of all Hazardous Air Pollutants (HAPs)	99.6 pph	4.4 tpy
Toxic Air Pollutant (TAP)	n/a pph	n/a tpy
Green House Gas Emissions as Total CO_2e	n/a	290,743 tpy

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

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April 9, 2020

Dear Pardue Limited Company:

Lucid Energy Delaware, LLC announces its application to the New Mexico Environment Department for an air quality permit for the **modification** of its **Road Runner Gas Processing Plant.** The expected date of application submittal to the Air Quality Bureau is **April 23, 2020.**

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Toxic Air Pollutant (TAP)	n/a pph	n/a tpy
Green House Gas Emissions as Total CO_2e	n/a	290,743 tpy

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April 9, 2020

Dear Mitchell and Wendy Ballard:

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April 9, 2020

Dear Jose D. and Elisa Zuniga:

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Total sum of all Hazardous Air Pollutants (HAPs)	99.6 pph	4.4 tpy
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April 9, 2020

Dear Southwestern Public Service Co.:

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Toxic Air Pollutant (TAP)	n/a pph	n/a tpy
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April 9, 2020

Dear Parker and Whitney Ballard:

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April 9, 2020

Dear Damian S. and Cynthia Kay Onsurez:

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

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

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Notice of Non-Discrimination
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April 9, 2020

Dear Geraldine M. Wyrick:

Lucid Energy Delaware, LLC announces its application to the New Mexico Environment Department for an air quality permit for the **modification** of its **Road Runner Gas Processing Plant.** The expected date of application submittal to the Air Quality Bureau is **April 23, 2020.**

The exact location for the proposed facility is at latitude **32** deg, **15** min, **56.71** sec and longitude **-104** deg, **6** min, **29.97** sec. The approximate location of this facility is **1.7** miles sout-west of Loving in Eddy County, New Mexico

The proposed **modification** of the facility includes updating NSR Permit 7200-M2 based on the most current plans and expanding the plant by adding two additional processing trains. 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
Total Suspended Particulates (TSP)	2.61 pph	11.2 tpy
PM_{10}	2.61 pph	11.2 tpy
$PM_{2.5}$	2.52 pph	10.8 tpy
Sulfur Dioxide (SO_2)	5.19 pph	22.7 tpy
Nitrogen Oxides (NO_x)	2,695 pph	130.8 tpy
Carbon Monoxide (CO)	12,195 pph	230.1 tpy
Volatile Organic Compounds (VOC)	8,930 pph	176.8 tpy
Total sum of all Hazardous Air Pollutants (HAPs)	99.6 pph	4.4 tpy
Toxic Air Pollutant (TAP)	n/a pph	n/a tpy
Green House Gas Emissions as Total CO_2e	n/a	290,743 tpy

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

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April 9, 2020

Dear Felix and Debra Calderon:

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April 9, 2020

Dear Vickie Connally:

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April 9, 2020

Dear Mrs. FW Sooby:

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April 9, 2020

Dear State of New Mexico:

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April 9, 2020

Dear Eddy County Manager:

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April 9, 2020

Dear Village of Loving:

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

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

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

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Notice of Non-Discrimination
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General Posting of Notices – Certification

I, Glen Blake, the undersigned, certify that on **4/09/2020,** posted a true and correct copy of the attached Public Notice in the following publicly accessible and conspicuous places in the **Village of Loving** in **Eddy County**, State of New Mexico on the following dates:

1. Facility entrance: 4/09/2020
2. Loving Allsup's Convenience Store: 4/09/2020
3. Village of Loving City Hall: 4/09/2020
4. Loving USPS: 4/09/2020

Signed this 9th day of April, 2020.

Glen Blake
Signature

4-9-2020
Date

Glen Blake
Printed Name

Field EHS+R Manager
Title

NOTICE

Lucid Energy Delaware, LLC announces its application to the New Mexico Environment Department for an air quality permit for the **modification** of its **Road Runner Gas Processing Plant.** The expected date of application submittal to the Air Quality Bureau is **April 23, 2020.**

The exact location for the proposed facility is at latitude **32** deg, **15** min, **56.71** sec and longitude **-104** deg, **6** min, **29.97** sec. The approximate location of this facility is **1.7** miles sout-west of Loving in Eddy County, New Mexico

The proposed **modification** cof the facility includes updating NSR Permit 7200-M2 based on the most current plans and espanding the plant by adding two additional processing trains. 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
Total Suspended Particulates (TSP)	2.61 pph	11.2 tpy
PM_{10}	2.61 pph	11.2 tpy
$PM_{2.5}$	2.52 pph	10.8 tpy
Sulfur Dioxide (SO_2)	5.19 pph	22.7 tpy
Nitrogen Oxides (NO_x)	2,695 pph	130.8 tpy
Carbon Monoxide (CO)	12,195 pph	230.1 tpy
Volatile Organic Compounds (VOC)	8,930 pph	176.8 tpy
Total sum of all Hazardous Air Pollutants (HAPs)	99.6 pph	4.4 tpy
Toxic Air Pollutant (TAP)	n/a pph	n/a tpy
Green House Gas Emissions as Total CO_2e	n/a	290,743 tpy

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

The owner and/or operator of the Facility is: **Lucid Energy Delaware, LLC, PO Box 158, Artesia, NM 88210**

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; (505) 476-4300; 1 800 224-7009; https://www.env.nm.gov/aqb/permit/aqb_draft_permits.html. Other comments and questions may be submitted verbally.

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NOTICE

Lucid Energy Delaware, LLC announces its application to the New Mexico Environment Department for an air quality permit for the modification of its **Road Runner Gas** Processing Plant. The expected date of application submittal to the Air Quality Bureau is April 13, 2020.

The exact location for the proposed facility is at latitude 32 deg, 15 min, 46.71 sec and longitude -104 deg, 6 min, 29.97 sec. The approximate location of this facility is 1.7 miles south-west of Loving in Eddy County, New Mexico.

The proposed modification of the facility includes updating NSR Permit 7200-M2 based on the most current plans and expanding the plant by adding two additional processing trains. 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
Total Suspended Particulates (TSP)	2.61 pph	11.2 tpy
PM_{10}	2.61 pph	11.2 tpy
$PM_{2.5}$	2.52 pph	10.8 tpy
Sulfur Dioxide (SO_2)	5.19 pph	22.7 tpy
Nitrogen Oxides (NO_x)	2,695 pph	130.8 tpy
Carbon Monoxide (CO)	12,195 pph	230.1 tpy
Volatile Organic Compounds (VOC)	8,930 pph	176.8 tpy
Total sum of all Hazardous Air Pollutants (HAPs)	99.6 pph	4.4 tpy
Toxic Air Pollutant (TAP)	n/a pph	n/a tpy
Green House Gas Emissions as Total CO_2e	n/a	290,743 tpy

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

The owner and/or operator of the Facility is: **Lucid Energy Delaware, LLC, PO Box 158, Artesia, NM 88210**

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; (505) 476-4300; 1 800 224-7009; https://www.env.nm.gov/aqb/permit/aqb_draft_permits.html. Other comments and questions may be submitted verbally.

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ALLSUP'S
NO SMOKING
Allsups # 220
105 North 8th
Loving, NM. 88256
CRUSH THE HUNGER
MADNESS
LENT COMBO
$3.99
NO LOITERING
JUUL

NOTICE

Lucid Energy **Delaware, LLC** announces its application to the New Mexico Environment Department for an air quality permit for the **modification** of its **Road Runner Gas Processing Plant.** The expected date of application submittal to the Air Quality Bureau is **April 23, 2020.**

The exact location for the proposed facility is at latitude **32** deg, **15** min, **56.71** sec and longitude **-104** deg, **6** min, **29.97** sec. The approximate location of this facility is **1.7** miles sout-west of Loving in Eddy County, New Mexico

The proposed **modification** cof the facility includes updating NSR Permit 7200-M2 based on the most current plans and espanding the plant by adding two additional processing trains. 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
Total Suspended Particulates (TSP)	2.61 pph	11.2 tpy
PM_{10}	2.61 pph	11.2 tpy
$PM_{2.5}$	2.52 pph	10.8 tpy
Sulfur Dioxide (SO_2)	5.19 pph	22.7 tpy
Nitrogen Oxides (NO_x)	2,695 pph	130.8 tpy
Carbon Monoxide (CO)	12,195 pph	230.1 tpy
Volatile Organic Compounds (VOC)	8,930 pph	176.8 tpy
Total sum of all Hazardous Air Pollutants (HAPs)	99.6 pph	4.4 tpy
Toxic Air Pollutant (TAP)	n/a pph	n/a tpy
Green House Gas Emissions as Total CO_2e	n/a	290,743 tpy

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

The owner and/or operator of the Facility is: **Lucid Energy Delaware, LLC, PO Box 158, Artesia, NM 88210**

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; (505) 476-4300; 1 800 224-7009; https://www.env.nm.gov/aqb/permit/aqb_draft_permits.html. Other comments and questions may be submitted verbally.

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

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575-748-4555


LUCID
Road Runner Plant
NOTICE
EMERGENCY PHONE: 1-575-748-4555
SAFETY FIRST!
NOTICE
AUTHORIZED PERSONNEL ONLY
CAUTION
H2S
POISONOUS GAS
NOTICE
24HR

NOTICE

Lucid Energy Delaware, LLC announces its application to the New Mexico Environment Department for an air quality permit for the **modification** of its Road Runner Gas Processing Plant. The expected date of application submittal to the Air Quality Bureau is **April 23, 2020.**

The exact location for the proposed facility is at latitude 32 deg, 15 min, 56.71 sec and longitude -104 deg, 6 min, 29.97 sec. The approximate location of this facility is **1.7** miles south-west of Loving in Eddy County, New Mexico

The proposed **modification** of the facility includes updating NSR Permit 7800-M2 based on the most current plans and espanding the plant by adding two additional processing trains. The estimated maximum quantities of new 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
Total Suspended Particulates (TSP)	2.61 pph	11.2 tpy
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Toxic Air Pollutant (TAP)	n/a pph	n/a tpy
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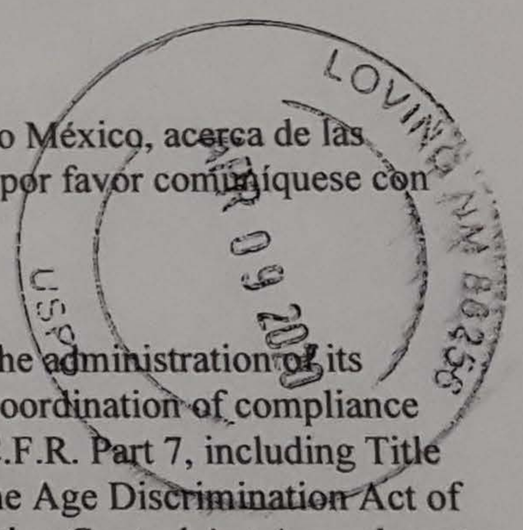

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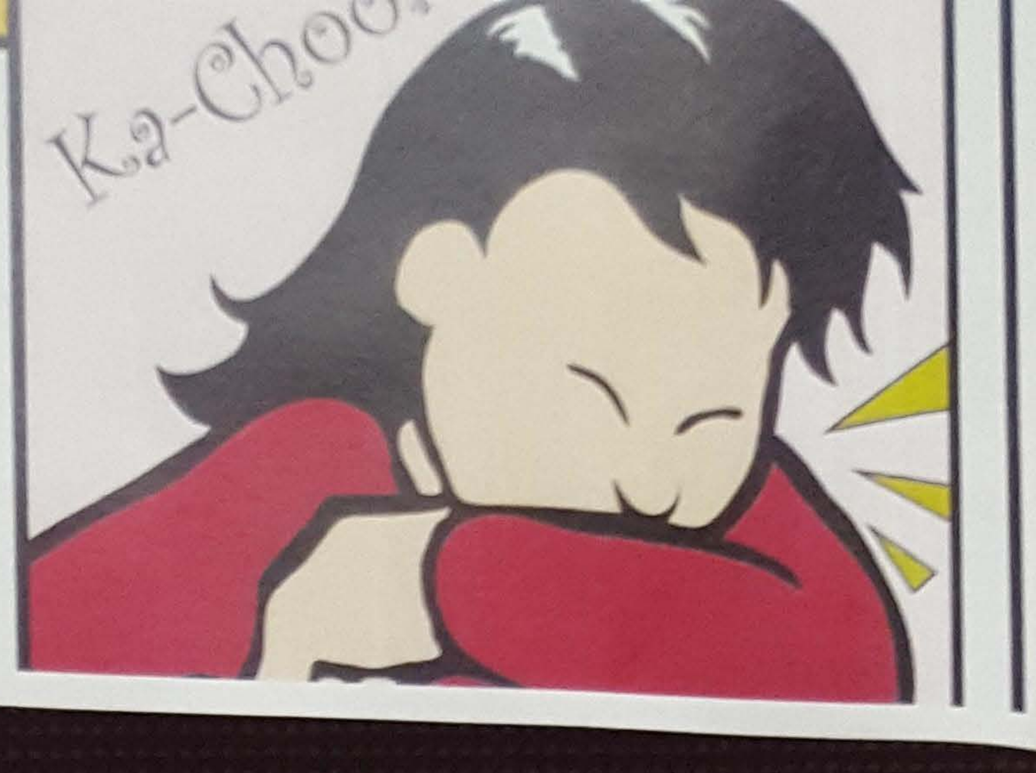
UNITED STATES
POST OFFICE
Loving NM. 88256



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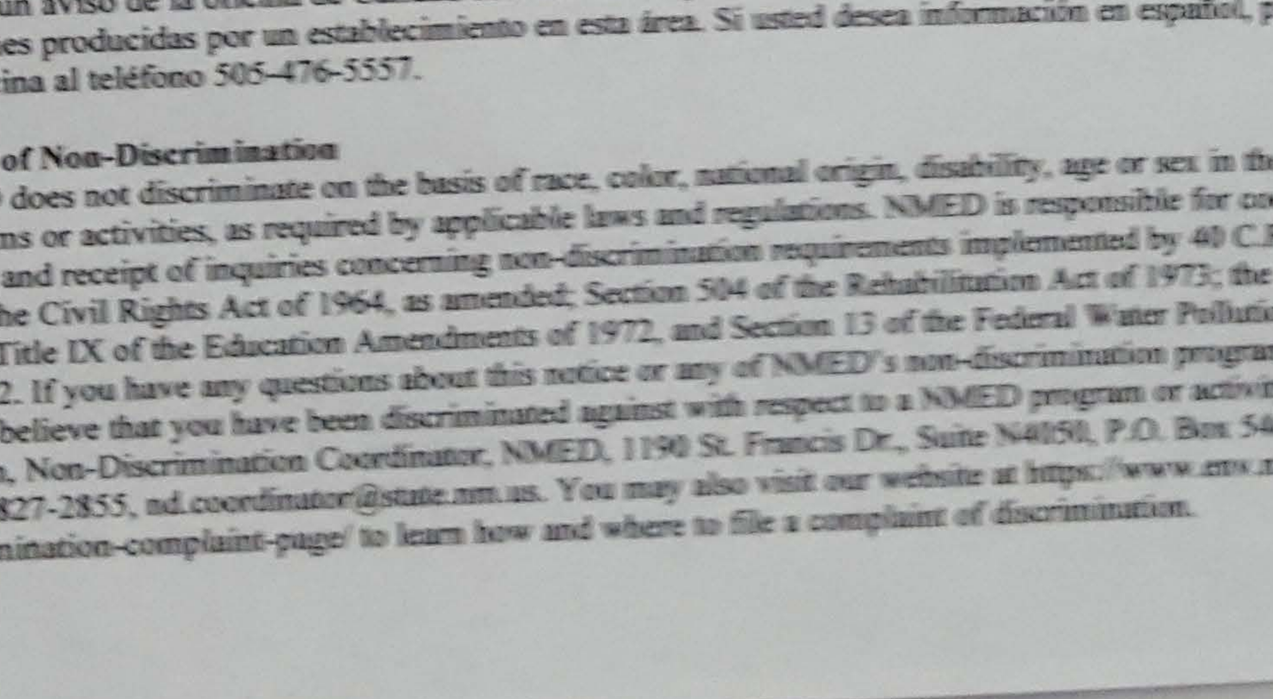


of Loving!
watchfire
VILLAGE OF LOVING
MANUEL H. GARZA
BUILDING
415 CEDAR STREET
VILLAGE HALL - MUNICIPAL COURT
MOTOR VEHICLE
LOVING POLICE DEPT.


MANUEL H. GARZA BUILDING

Submittal of Public Service Announcement – Certification

I, Martin Schluep, the undersigned, certify that on **4/7/2020**, submitted a public service announcement to **Carlsbad Radio (KAMQ 1240 AM)** that serves the **Village of Loving**, **Eddy County**, New Mexico, in which the source is or is proposed to be located and that **Carlsbad Radio (KAMQ 1240 AM). KAMQ 1240 RESPONDED THAT IT WOULD AIR THE ANNOUNCEMENT on April 10, 2020.**

Signed this 10th day of April, 2020.

M. Schluep

Signature

April 10th, 2020

Date

Martin Schluep

Printed Name

Principal Consultant with Alliant Environmental, LLC

Title

mschluep@alliantenv.com

From: Melissa Fetman <mfetman@alliantenv.com>
Sent: Wednesday, April 8, 2020 3:57 PM
To: mschluep@alliantenv.com
Subject: FW: Receipt from CARLSBAD RADIO, INC.

See receipt below for the Road Runner PSA.

Melissa D. Fetman
Alliant Environmental, LLC
7804 Pan American Fwy. NE, Suite 5
Albuquerque, NM 87109
(C) 505.385.3407
(F) 505.771.0793
www.alliantenv.com

-----Original Message-----
From: CARLSBAD RADIO, INC. <noreply@gge4mailer.com>
Sent: Wednesday, April 8, 2020 3:32 PM
To: mfetman@alliantenv.com
Subject: Receipt from CARLSBAD RADIO, INC.

THANKS

Receipt follows:

_____
========== TRANSACTION RECORD ========== CARLSBAD RADIO, INC.

CARLSBAD, NM 882206427

TYPE: Purchase

ACCT: American Express $ 538.22 USD

CARDHOLDER NAME : Alliant Environmental
CARD NUMBER : ############2171
DATE/TIME : 08 Apr 20 15:31:33
REFERENCE # : 001 0800280 M
AUTHOR. # : 164203
TRANS. REF. : order #3509-00002

Approved - Thank You 100

Please retain this copy for your records.

Cardholder will pay above amount to
card issuer pursuant to cardholder
agreement.
=====================================

Melissa Fetman

From: Debbie Thomas <carlsbadradiotraffic@gmail.com>
Sent: Wednesday, April 8, 2020 8:24 AM
To: Melissa Fetman
Subject: Re: PSA Request

I will get this taken care of for you. It will run on Friday.

On Tue, Apr 7, 2020 at 4:00 PM Melissa Fetman <mfetman@alliantenv.com> wrote:

> Ms. Thomas,
>
> Lucid Energy Delaware, LLC kindly requests, according to New Mexico air quality regulations, that Carlsbad Radio (KAMQ 1240 AM) make the following public services announcement:
>
> **"Lucid Energy Delaware, LLC has applied to modify NSR permit No. 7200-M2 for the Road Runner Gas Processing Plant located at latitude: 32 degrees, 15 minutes, 56.71 seconds and longitude: -104 degrees, 6 minutes, 29.97 seconds. The plant is approximately 1.7 miles southwest of Loving, NM. The proposed modification of the facility includes expanding the plant by adding two additional processing trains. Public notice of this change is being posted at the facility entrance, the Allsup's Convenience Store in Loving, the Village of Loving City Hall, and also at the Loving USPS.**
>
> **If you have any questions regarding this application, please contact the New Mexico Environmental Department, Air Quality Bureau located at 525 Camino de los Marquez, Suite 1, Santa Fe, New Mexico 87505-1816; (505) 476-4300; 1-800-224-7009."**
>
> Please contact me if you need anything else or with any questions you may have.
>
> Thank you for your help,
>
> Melissa D. Fetman
>
> Alliant Environmental, LLC

7804 Pan American Fwy. NE, Suite 5

Albuquerque, NM 87109

(C) 505.385.3407

(F) 505.771.0793

www.alliantenv.com

--

Thanks!

Debbie Thomas
(575) 302-2555
debbie@carlsbadradio.com

Melissa Fetman

From: Melissa Fetman <mfetman@alliantenv.com>
Sent: Tuesday, April 7, 2020 4:00 PM
To: 'carlsbadradiotraffic@gmail.com'
Subject: PSA Request

Ms. Thomas,

Lucid Energy Delaware, LLC kindly requests, according to New Mexico air quality regulations, that Carlsbad Radio (KAMQ 1240 AM) make the following public services announcement:

"Lucid Energy Delaware, LLC has applied to modify NSR permit No. 7200-M2 for the Road Runner Gas Processing Plant located at latitude: 32 degrees, 15 minutes, 56.71 seconds and longitude: -104 degrees, 6 minutes, 29.97 seconds. The plant is approximately 1.7 miles southwest of Loving, NM. The proposed modification of the facility includes expanding the plant by adding two additional processing trains. Public notice of this change is being posted at the facility entrance, the Allsup's Convenience Store in Loving, the Village of Loving City Hall, and also at the Loving USPS.

If you have any questions regarding this application, please contact the New Mexico Environmental Department, Air Quality Bureau located at 525 Camino de los Marquez, Suite 1, Santa Fe, New Mexico 87505-1816; (505) 476-4300; 1-800-224-7009."

Please contact me if you need anything else or with any questions you may have.

Thank you for your help,

Melissa D. Fetman
Alliant Environmental, LLC
7804 Pan American Fwy. NE, Suite 5
Albuquerque, NM 87109
(C) 505.385.3407
(F) 505.771.0793
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Property Record Card

Eddy Assessor

LUCID ENERGY DELAWARE LLC

3100 MCKINNON ST STE 800
DALLAS, TX 75201-7014

Account: R200265

Tax Area: CO_NR - CARLSBAD-OUT (Nonresidential)

Acres: 122.000

Parcel: 4-164-138-202-066

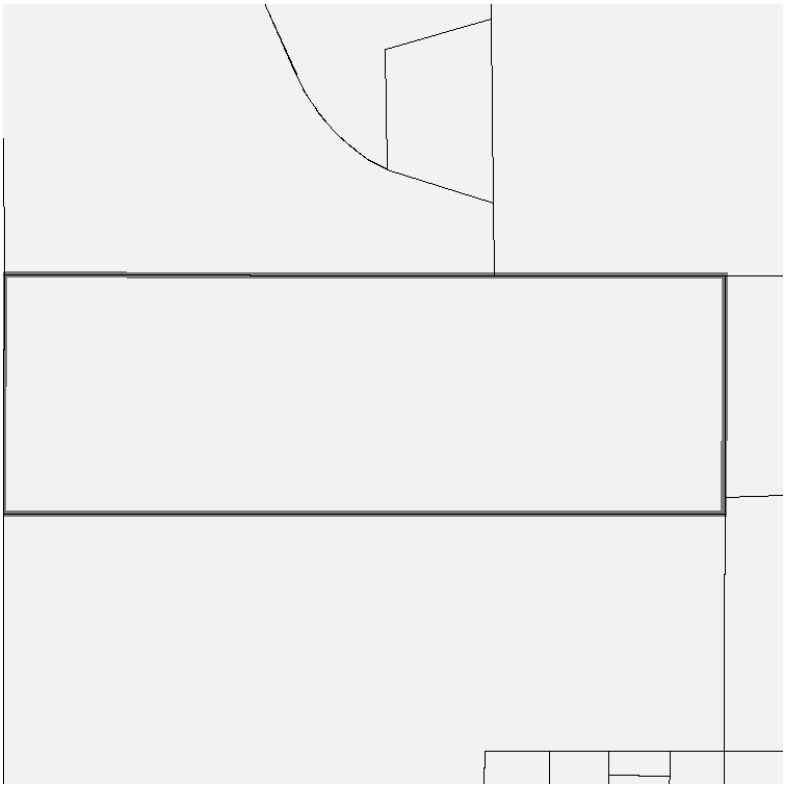
Situs Address:
E OF 1011 BOUNDS ROAD
CARLSBAD, 88220

Value Summary

Value By:	Market	Override
Land (1)	$220	N/A
Total	**$220**	**$220**

Legal Description

Subd: CONNALLY LINE ADJUSTMENT Tract: A THIS TRACT IS IN TWO DIFFERENT SEC'S AND HAS TO BE SOLD TOGETHER SEE 4-163-138-471-039 Quarter: NE S: 31 T: 23S R: 28E



Public Remarks

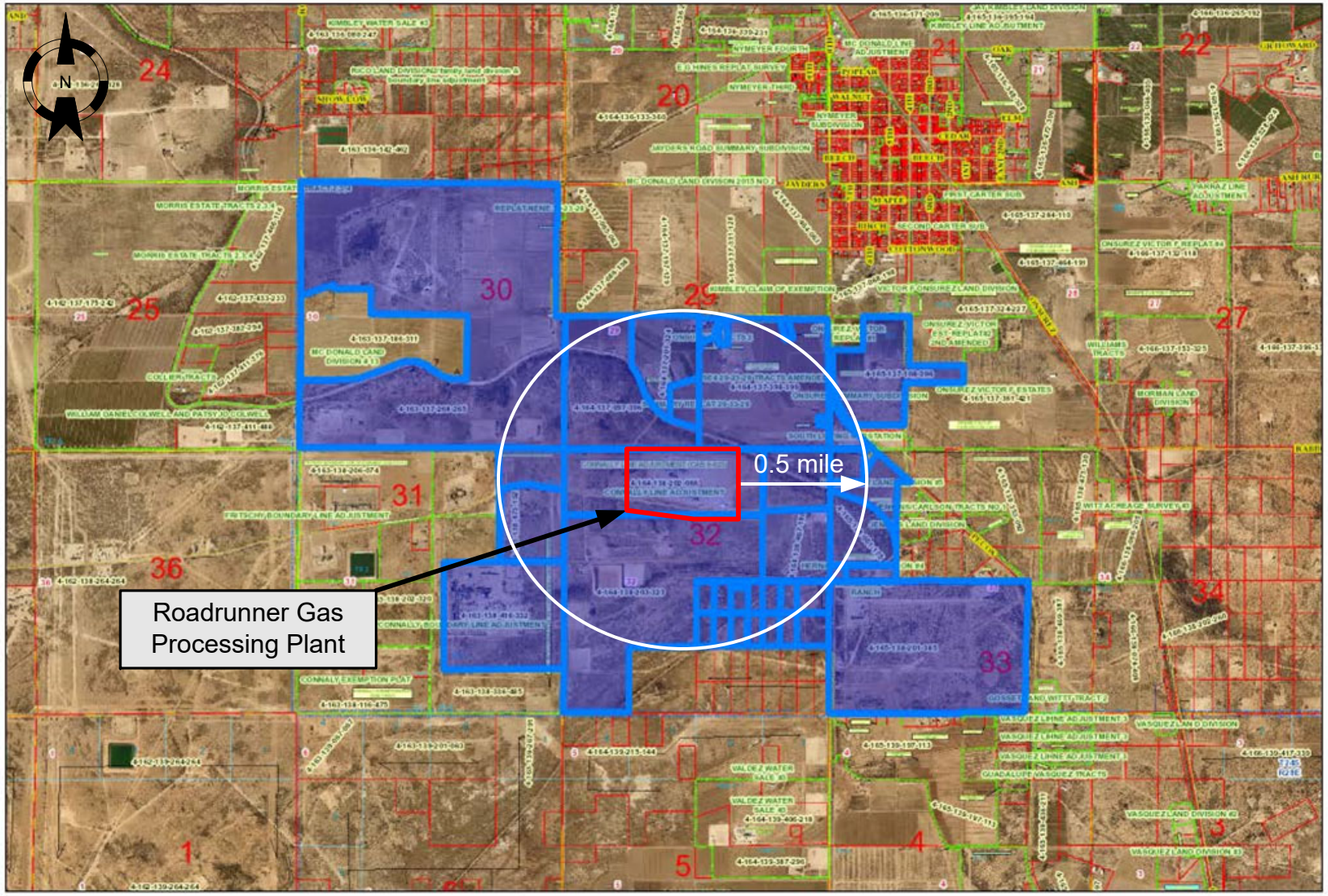
Entry Date	Model	Remark
02/06/2017		BK 1091 PG 666

Land Occurrence 1

Property Code	0400 - AGRICULTURAL LAND	Land Code	122_1_8 - Grazing Land C - 1.8
Description	AGRICULTURAL LAND	Measure	A - Acres

Abstract Summary

Code	Classification	Actual Value Value	Taxable Value	Actual Value Override	Taxable Override
0400	AGRICULTURAL LAND	$220	$73	NA	NA
Total		**$220**	**$73**	**NA**	**NA**



ALLIANT ENVIRONMENTAL, LLC			**Area Map (Surrounding Land Owners)**		**Lucid Energy Delaware, LLC**	
Scale:	Drawn by: MDF	Date: 4/8/2020	**Roadrunner Gas Processing Plant** N 32° 15' 56.71" Latitude W 104° 6' 29.97" Longitude	Project No.: 097-002	File Name: **Roadrunner Figures**	Figure: Section 9
	Chk'd by:	Date:				

Section 10

Written Description of the Routine Operations of the Facility

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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 Roadrunner Gas Processing Plant is a natural gas processing plant located in Eddy County. 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.

The operation of the Roadrunner Gas Processing Plant is intended to process 880 MMscfd of gas. The gas will be treated to remove CO_2, H_2S, dehydrated to remove water and processed to remove heavy (liquid) hydrocarbons from the gas stream. Several plant systems will be involved to perform these functions.

Slug Catcher / Separator

A large slug catcher has been placed at the front of the plant to catch and separate any free hydrocarbon liquids and water present in the inlet pipeline gas stream. It is capable of handling large slugs of liquid brought into the plant from pipeline pigging operations. The equipment also serves as a three-phase separator to separate the free hydrocarbons, gas to be processed, and any water that may have condensed out in the pipeline after field dehydration.

Stabilizers

The overhead stabilization system is in place to lower the Reid Vapor Pressure (RVP) of the pipeline liquids and condensate after they are dropped out of the gas stream. Through a process that heats the condensate to flash off lighter hydrocarbons so the RVP is lowered to 9. The liquids out of the slug catcher are stabilized and sent to the tank farm for truck sales. Any remaining vapors are recycled back to the front of the Slug Catcher. The liquid in the tank farm is then stable and thus does not give off significant flashing vapors. Significant working and standing losses will occur at the tank farm. These emissions will be controlled with a vapor combustor.

Amine Treating

The amine units are designed to remove CO_2 and H_2S (from the natural gas stream) to meet pipeline specifications. In addition, the carbon dioxide can freeze in the cryogenic unit forming dry ice and forcing the shutdown of the facility. Amine treating is an exothermic chemical reaction process. The treating solution is a mixture of 50% RO water, 40% methyl-diethanolamine (MDEA) and 10% Piperazine. This aqueous mixture is regenerated and reused. Lean MDEA solution is pumped to the top of the contactor and allowed to flow downward. Wet gas is fed into the bottom of the contactor and flows upward.

As the lean MDEA solution flows down through the contactor, it comes into contact with the wet gas. The CO_2 and H_2S are absorbed by amine. The amine is now known as rich amine and the remaining gas is sweet and continues to the dehydration systems.

The regeneration of the amine utilizes two 55 MBTU/hr heaters per amine unit. Significant amounts of VOC and HAP can be generated in this process. The acid gas is sent to a thermal oxidizer where additional combustion will occur further minimizing emissions.

Glycol Dehydration

Triethylene glycol (TEG) is used to remove water from the natural gas stream. Water is saturated into the sweet gas stream during the Amine Treating process. This water is absorbed by the TEG solution. The wet gas is brought into contact with dry glycol in an absorber. Water vapor is absorbed in the glycol and consequently, the water content is reduced. The wet rich glycol then flows from the absorber to a regeneration system in which the entrained gas is separated and fractionated in a

column and re-boiler. The heating allows boiling off the absorbed water vapor and the water dry lean glycol is cooled (via heat exchange) and pumped back to the absorber.

The regeneration of the TEG utilizes a small (less than 10 MMBtu/hr) heaters per TEG dehydration unit. This process produces VOC and HAP emission. This stream is condensed. The wastewater stream is sent to a wastewater tank. The non-condensable stream is sent to the thermal oxidizer for control where further combustion reduces the emissions.

Molecular Sieve Dehydration

Molecular sieve dehydration is used upstream of the cryogenic processes to achieve a -160°F water dew point. The process uses three molecular sieve vessels with two vessels in service adsorbing moisture from the gas stream and the other vessel in the regeneration mode.

During the regeneration mode, hot, dry gas (regen gas) is passed up through the vessel to drive off the adsorbed moisture from the molecular sieve. The gas comes from the discharge of the residue compressors and it is passed through a heat exchanger and a heater to achieve a temperature of approximately 500°F. After the gas passes through the bed it is cooled in an air cooled exchanger. The water in the gas condenses and is separated from the gas stream in a separator. The regen gas is routed to the inlet of the cryogenic unit.

Cryogenic Unit

The cryogenic unit is designed to liquefy natural gas components from the sweet, dehydrated inlet gas by removing work from the gas be means of the turbo expander/compressor. The cryogenic unit recovers natural gas liquids (NGL) by cooling the gas stream to extremely cold temperatures (-160°F and lower) and condensing components such as ethane, propane, butanes and heavier. The gas is cooled by a series of heat exchangers and by lowering the pressure of the gas from around 950 PSIG to approximately 190 PSIG. Once the gas has passed through the system of heat exchangers and expansion it is re-compressed using the energy obtained from expanding the gas.

The gas will flow through the following heat exchangers:

- **Gas to Gas Exchanger –** This unit exchanges heat from the warm inlet gas and the cold residue gas that has already been expanded. This cools the inlet gas.
- **Product Heater –** This unit will cool the inlet gas by exchanging heat with the cold liquid product that has been recovered.
- **Side-Reboiler –** This unit uses heat from the inlet gas to boil the methane out of the liquid. One stream comes off the side of the tower and one stream comes off of the bottom of the tower. This also cools the inlet gas.

The gas is expanded and recompressed in the expander/compressor.

SSM Flares

Three SSM flares are proposed. These flares' header system gathers hydrocarbons from Pressure Safety Devices in the plant, and routes them to the flares. These systems are also used to safely control blow-down hydrocarbons from equipment in the plant.

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)**: Lucid Energy Delaware, LLC – Road Runner Gas Processing Plant**

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 since this facility is a minor source for PSD. This is a modification but total facility emissions are presented below.**

a. **NOx: 130.8 TPY**
b. **CO: 230.1 TPY**
c. **VOC: 176.8 TPY**
d. **SOx: 22.7 TPY**
e. **PM: 11.2 TPY**
f. **PM10: 11.2 TPY**
g. **PM2.5: 10.8 TPY**
h. **Fluorides: 0 TPY**
i. **Lead: 0 TPY**
j. **Sulfur compounds (listed in Table 2): H_2S: 2.9 TPY**
k. **GHG: 291,473.8 TPY**

Section 13

Determination of State & Federal Air Quality Regulations

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

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

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

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

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

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

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

INCLUDE ANY OTHER INFORMATION NEEDED TO COMPLETE AN APPLICABILITY DETERMINATION OR THAT IS 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.

STATE REGULATIONS:

STATE REGU-LATIONS CITATION	Title	Applies ? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION: (You may delete instructions or statements that do not apply in the justification column to shorten the document.)
20.2.1 NMAC	General Provisions	Yes	Facility	General Provisions apply to Notice of Intent, Construction, and Title V permit applications.
20.2.3 NMAC	Ambient Air Quality Standards NMAAQS	Yes	Facility	20.2.3 NMAC is a State Implementation Plan (SIP) approved regulation that limits the maximum allowable concentration of Total Suspended Particulates, Sulfur Compounds, Carbon Monoxide and Nitrogen Dioxide. Title V applications, see exemption at 20.2.3.9 NMAC
20.2.7 NMAC	Excess Emissions	Yes	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.
20.2.33 NMAC	Gas Burning Equipment - Nitrogen Dioxide	No		This facility has no new gas burning equipment having a heat input of greater than 1,000,000 million British Thermal Units per year per unit.
20.2.34 NMAC	Oil Burning Equipment: NO_2	No		This facility has no oil burning equipment having a heat input of greater than 1,000,000 million British Thermal Units per year per unit.
20.2.35 NMAC	Natural Gas Processing Plant – Sulfur	Yes	Facility	This regulation establishes sulfur emission standards for natural gas processing plants. The proposed facility meets the definition of a new natural gas processing plant under this regulation and is subject to the requirements of this regulation [20.2.35.7 (B) NMAC]. The facility will comply with all requirements under 20.2.35 NMAC as applicable.
20.2.38 NMAC	Hydrocarbon Storage Facility	No		The proposed facility is not a tank battery or petroleum production facility as defined in this regulation [20.2.38.7 (D) and (E) NMAC]. The facility does not receive crude oil or condensate from a well. All gas and liquids enter the facility through a pipeline.
20.2.39 NMAC	Sulfur Recovery Plant - Sulfur	No		This regulation establishes sulfur emission standards for sulfur recovery plants which are not part of petroleum or natural gas processing facilities. This regulation does not apply to the facility because it is superseded by 20.2.35 NMAC.
20.2.61.109 NMAC	Smoke & Visible Emissions	Yes	EP-1, 2/3-EP-1, 4-EP-1, EP-2, 2-EP-2, 3-EP-2, 4-EP-2, EP-3A, EP-3B, 2-EP-3A, 2-EP-3B, EP-4, 2-EP-4, 3-EP-4, 4-EP-4, EP-5, 2-EP-5, 3-EP-5, 4-EP-5, EP-6, 2-EP-6, EP-9, COMB-1,	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).

STATE REGU-LATIONS 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.)
20.2.70 NMAC	Operating Permits	Yes	Facility	This regulation establishes requirements for obtaining an operating permit. The facility is a Title V major source.
20.2.71 NMAC	Operating Permit Fees	Yes	Facility	This regulation establishes a schedule of operating permit emission fees. The facility is subject to 20.2.70 NMAC and is therefore subject to requirements of this regulation.
20.2.72 NMAC	Construction Permits	Yes	Facility	This regulation establishes the requirements for obtaining a construction permit. This facility is subject to 20.2.72 NMAC as per 20.2.72.202.C.1.a. Include both stack and fugitive emissions to determine PER.
20.2.73 NMAC	NOI & Emissions Inventory Requirements	Yes	Facility	This regulation establishes emission inventory requirements. The facility meets the applicability requirements of 20.2.73.300 NMAC.
20.2.74 NMAC	Permits – Prevention of Significant Deterioration (PSD)	No		This regulation establishes requirements for obtaining a prevention of significant deterioration permit. The facility does not have the potential to emit greater than 250 tons per year of any criteria pollutant and, therefore, is not subject to this regulation.
20.2.75 NMAC	Construction Permit Fees	Yes	Facility	This facility is subject to 20.2.72 NMAC and is in turn subject to 20.2.75 NMAC for NSR permit application fees only. This facility is exempt from annual fees under this part (20.2.75.11.E NMAC) as it is subject to fees pursuant to 20.2.71 NMAC.
20.2.77 NMAC	New Source Performance	Yes	Units subject to 40 CFR 60	This is a stationary source which is subject to the requirements of 40 CFR Part 60, as amended through September 23, 2013. This facility is subject to NSPS Subpart OOOOa, and NSPS Subpart Dc.
20.2.78 NMAC	Emission Standards for HAPS	No		This facility does not emit hazardous air pollutants which are subject to the requirements of 40 CFR Part 61 and is therefore not subject to this regulation. This facility is an area source for HAPs.
20.2.79 NMAC	Permits – Nonattainment Areas	No		This regulation establishes the requirements for obtaining a non-attainment area permit. The facility is not located in a non-attainment area and therefore is not subject to this regulation.
20.2.80 NMAC	Stack Heights	No		
20.2.82 NMAC	MACT Standards for source categories of HAPS	Yes	Units Subject to 40 CFR 63	This regulation applies to all sources emitting hazardous air pollutants, which are subject to the requirements of 40 CFR Part 63, as amended through August 29, 2013. This facility is subject to a MACT standard, specifically Subpart HH.

FEDERAL REGULATIONS

FEDERAL REGU-LATIONS CITATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
40 CFR 50	NAAQS	Yes	Facility	If subject, this would normally apply to the entire facility. This applies if you are subject to 20.2.70, 20.2.72, 20.2.74, and/or 20.2.79 NMAC.

FEDERAL REGU-LATIONS CITATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
NSPS 40 CFR 60, Subpart A	General Provisions	Yes	Units subject to 40 CFR 60	Applies if any other Subpart in 40 CFR 60 applies.
NSPS 40 CFR60.40b Subpart Dc	Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units	Yes	E P-2, 2-EP-2, 3-EP-2, 4-EP-2, EP-3A, EP-3B, 2-EP-3A, 2-EP-3B, EP-6, 2-EP-6,	This regulation establishes standards of performance for small industrial-commercial-institutional steam generating units. Several units will be installed or modified after June 9, 1989, with a heat input capacity greater than or equal to 10 MMbtu/hr but less than 100 MMbtu/hr. The units will only burn natural gas and therefore will not subject to performance tests, reporting requirements, or emission limits under this regulation. The facility will follow all record keeping requirements for these units.
NSPS 40 CFR 60, Subpart Kb	Standards of Performance for **Volatile Organic Liquid Storage Vessels** (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced **After** July 23, 1984	No		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. However, this subpart does not apply as per 60.110b(d)(4) Vessels with a design capacity less than or equal to 1,589.874 m^3 used for petroleum or condensate stored, processed, or treated prior to custody transfer.
NSPS 40 CFR 60, Subpart KKK	Subpart KKK—Standards Of Performance For Equipment Leaks Of Voc From **Onshore Natural Gas Processing Plants** For Which Construction, Reconstruction, Or Modification Commenced After January 20, 1984, And On Or Before August 23, 2011	No		This facility will have 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		The facility is a natural gas processing plant, however, there is not 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,	No		Construction commenced after September 18, 2015

FEDERAL REGU-LATIONS CITATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
	Transmission, and Distribution for which construction, modification or reconstruction commenced after August 23, 2011 and before September 18, 2015			
NSPS 40 CFR Part 60 Subpart OOOOa	Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced After September 18, 2015	Yes		D-1, D-2, D-3, D-4, 2-D-1, 2-D-2, 2-D-3, 2-D-4, 3-D-1, 3-D-2, 3-D-3, 3-D-4, 4-D-1. 4-D-2, 4-D-3, and 4-D-4 are electric driven compressors manufactured after September 18, 2015 and are thus subject to 60.5385a, 60.5410a, 60.5415a, and 60.5420a T-1, T-2, T-3, T-4, and T-5 are storage vessels constructed after September 18, 2015 with federally enforceable limitations that limit emissions to less than 6 tpy of VOCs. T-6 is a storage vessel that emits less than 6 tpy of VOCs. As such, T1::T6 are not subject to 60.5395a, 60.5410a, 60.5417a, 60.5420a EP-8 and 2-EP-8 are sweetening units as defined in this subpart and are constructed after September 18, 2015. Per 60.5365a(g) (3) these units are required to comply with 60.5423a(c) but not required to comply with 60.5405a through 60.5407 a and 60.5410a(g) and 60.5415a(g). The facility is defined as an onshore natural gas processing plant covered by 60.5400a, 60.5401a, 60.5402a, 60.5421a, and 60.5422a.
NSPS 40 CFR Part 60 Subpart JJJJ	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines	No		There are no internal reciprocating compressor engines located on location.
MACT 40 CFR 63, Subpart A	General Provisions	Yes	Units Subject to 40 CFR 63	Applies if any other Subpart in 40 CFR 63 applies.
MACT 40 CFR 63.760 Subpart HH	**Oil and Natural Gas Production Facilities**	Yes	EP-7, 2-EP-7, 3-EP-7, 4-EP-7	This regulation establishes national emission standards for hazardous air pollutants from oil and natural gas production facilities. The facility is an area source of HAPs and meets the definition of a natural gas processing plant. This regulation applies to units EP-7 and 2-EP-7. These units must comply with 40 CFR 63.764(d)(2) as area sources not located in a UA plus offset and UC boundary.
MACT 40 CFR 63 Subpart HHH		No		This facility is not a natural gas transmission or storage facility. Thus this subpart does not apply,

FEDERAL REGU-LATIONS CITATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
MACT 40 CFR 63 Subpart DDDDD	National Emission Standards for Hazardous Air Pollutants for Major Industrial, Commercial, and Institutional Boilers & Process Heaters	No		This subpart establishes national emission limitations and work practice standards for hazardous air pollutants (HAP) emitted from industrial, commercial, and institutional boilers and process heaters located at major sources of HAP. As this facility is not a major source of HAP, this subpart does not apply.
MACT 40 CFR 63 Subpart ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (**RICE MACT**)	No		There are no internal reciprocating compressor engines located on location.
40 CFR 64	**Compliance Assurance Monitoring**	No		This is modification application is for a minor NSR permit.
40 CFR 68	**Chemical Accident Prevention**	Yes	Facility	The facility is an affected facility, as it will use flammable process chemicals such as propane at quantities greater than the thresholds. The facility will develop and mintain a RMP Plan for these chemicals.

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.

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

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

Startup and shutdown procedures are either based on manufacturer's recommendations or based on Lucid's experience with specific equipment. These procedures are designed to proactively address the potential for malfunction to the greatest extent possible. These procedures dictate a sequence of operations that are designed to minimize emissions from the facility during events that result in shutdown and subsequent startup.

Equipment located at this facility is equipped with various safety devices and features that aid in the prevention of excess emissions in the event of an operational emergency. SSM emissions over the SSM emission limit, and any Malfunction emissions, will be reported as excess emissions. Corrective action to eliminate the excess emissions and prevent recurrence in the future will be undertaken as quickly as safety allows.

Section 15

Alternative Operating Scenarios

(Submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

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

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

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

This application is not seeking to permit any Alternative Operating Scenarios.

Section 16

Air Dispersion Modeling

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

What is the purpose of this application?	Enter an X for each purpose that applies
New PSD major source or PSD major modification (20.2.74 NMAC). See #1 above.	
New Minor Source or significant permit revision under 20.2.72 NMAC (20.2.72.219.D NMAC). See #1 above. **Note:** Neither modeling nor a modeling waiver is required for VOC emissions.	**X**
Reporting existing pollutants that were not previously reported.	
Reporting existing pollutants where the ambient impact is being addressed for the first time.	
Title V application (new, renewal, significant, or minor modification. 20.2.70 NMAC). See #3 above.	
Relocation (20.2.72.202.B.4 or 72.202.D.3.c NMAC)	
Minor Source Technical Permit Revision 20.2.72.219.B.1.d.vi NMAC for like-kind unit replacements.	
Other: i.e. SSM modeling. See #2 above.	**X**
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.

X 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:	Road Runner Gas Processing Plant
2	Name of company:	Lucid Energy Delaware, LLC
3	Current Permit number:	7200-M2
4	Name of applicant's modeler:	Martin R. Schluep
5	Phone number of modeler:	(505) 205-4819
6	E-mail of modeler:	mschluep@alliantenv.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.		
	Lucid Energy Delaware, LLC (Lucid) owns and operates the Road Runner Gas Processing Plant located near Loving in Eddy County, NM. The most recent New Source Review (NSR) permit No. 7200-M2 was issued on November 28, 2018. Lucid is proposing a significant revision to its NSR Permit No. 7200-M2 to authorize a proposed expansion project to expand its current Road Runner Gas Processing Plant by adding two processing trains (processing trains 3 and 4).		
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).		
	The nearest Class I area is Carlsbad Caverns National Park at 32.5 km from the facility.		
10	Is the facility located in a non-attainment area? If so describe below	Yes☐	No☒
11	Describe any special modeling requirements, such as streamline permit requirements.		
	N/A		

16-C: Modeling History of Facility

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

1	Pollutant	Latest permit and modification number that modeled the pollutant facility-wide.	Date of Permit	Comments
	CO	7200-M2	11/28/2018	
	NO_2	7200-M2	11/28/2018	
	SO_2	7200-M2	11/28/2018	
	H_2S	7200-M2	11/28/2018	
	PM2.5	7200-M2	11/28/2018	
	PM10	7200-M2	11/28/2018	
	TSP	7200-M2	11/28/2018	
	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.

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

	SO_2	☒	☐	☐	☐	☐
	H_2S	☒	☐	☐	☐	☐
	PM2.5	☒	☒	☐	☐	☐
	PM10	☒	☒	☐	☐	☐
	TSP (N/A)	☐	☐	☐	☐	☐
	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 – There are no New Mexico TAPs that are modeled for this application.

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☐

16-G: Surrounding source modeling

1	Date of surrounding source retrieval	2/17/2020 (from NMED – Eric Peters)

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
Various	Deleted Lucid Energy Road Runner Gas Plant sources since that is the site we are modeling for.

16-H: Building and structure downwash

1	How many buildings are present at the facility?	Two (2) buildings		
2	How many above ground storage tanks are present at the facility?	Five (5) above ground storage tanks		
3	Was building downwash modeled for all buildings and tanks? If not explain why below.		Yes☒	No☐
4	Building comments	No 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 restricted area at the facility is defined by a fence and entry gates.		
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

5 Describe receptor spacing along the fence line.

Fenceline receptors were placed along the facility boundary at least every 50-meters in linear fenceline distance.

A rectangular fine grid receptor array was placed at 100- by 100-meter spacing from the fenceline outward to 1,000 meters in all directions.

A medium receptor grid was placed at 250- by 250-meter spacing from the fine grid to areas beyond 2,500 meters if the radius of impact exceeds 1,000 meters.

A coarse receptor was placed at 500- by 500-meter spacing from the medium grid to areas beyond 5,000 meters if the radius of impact exceeds 2,500 meters.

A coarse receptor was placed at 1,000- by 1,000-meter spacing from the medium grid to areas beyond 10,000 meters but no more than 50,000 meters, if the radius of impact exceeds 5,000 meters.

6	Describe the PSD Class I area receptors.
	PSD Class I area receptors were obtained from the NMED MergeMaster database.

16-J: Sensitive areas

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

16-K: Modeling Scenarios

1	Identify, define, and describe all modeling scenarios. Examples of modeling scenarios include using different production rates, times of day, times of year, simultaneous or alternate operation of old and new equipment during transition periods, etc. Alternative operating scenarios should correspond to all parts of the Universal Application and should be fully described in Section 15 of the Universal Application (UA3).		
	The one scenario which was modeled was SSM/M flaring with all other units operating.		
2	Which scenario produces the highest concentrations? Why?		
	N/A – only one scenario was modeled		
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: **N/A**		

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☐
	SSM emission rates from the flares were modeled for short term (lb/hr) and annual (tpy). The short term emission rates are much higher due to short term operation (flaring). The flares do not continuously flare waste gas.		

16-L: NO_2 Modeling

1	Which types of NO_2 modeling were used? Check all that apply.	
	☒	ARM2
	☐	100% NO_X to NO_2 conversion
	☐	PVMRM
	☐	OLM
	☐	Other:
2	Describe the NO_2 modeling.	
	ARM2 was used to convert from NO_X to NO_2.	
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☐
4	Describe the design value used for each averaging period modeled.	
	1-hour: High eighth high Annual: Highest Annual Average of Three Years	

16-M: Particulate Matter Modeling

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

	NO_X (ton/yr)	SO_2 (ton/yr)	$[PM2.5]_{annual}$	$[PM2.5]_{24\text{-}hour}$
	130.81	22.72	0.01 ug/m^3	0.25 ug/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☐
3	Have the minor NSR exempt sources or Title V Insignificant Activities" (Table 2-B) sources been modeled?	Yes☐	No☒

4	Which units consume increment for which pollutants? **All units consume increment. SO_2 modeling shows site-wide concentrations for all averaging periods below the SIL; therefore, no PSD Increments analysis is required for SO2. Site-wide and unit specific $PM_{2.5}$ and PM_{10} do not increase with this permitting action. Total $PM_{2.5}$ and PM_{10} emission rates decrease; therefore, no PSD Increments analysis for $PM_{2.5}$ and PM_{10} is required.**				
	Unit ID	NO_2	SO_2	PM10	PM2.5

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)
	EP-1	23.2 g/mol	6.87*10^8 cal/s	22.98 m
	2/3-EP-1	23.2 g/mol	1.37*10^9 cal/s	32.50 m
	4-EP-1	23.2 g/mol	6.87*10^8 cal/s	22.98 m

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.		
	Actual road width was measured at 28.3 ft (8.62 m). Initial horizontal sigma was determined for adjacent volumes by dividing W (adjusted road width) by 2.15 = 14.62 m / 2.15 = 6.8 m. Initial vertical sigma was calculated based on a large truck release height as shown in Table 28 of the NMED modeling guidelines = 3.16 m.		
3	Describe how the volume sources are related to unit numbers. Or say they are the same.		
	The total haul road emission rates are under ID "HAUL". In the model, the haul road was modeled with seven (7) volume sources with ID's "Haul1 through Haul7".		
4	Describe any open pits.		
	N/A		
5	Describe emission units included in each open pit.		
	N/A		

16-R: Background Concentrations

1	Were NMED provided background concentrations used? Identify the background station used below. If non-NMED provided background concentrations were used describe the data that was used.	Yes☒	No☐
	CO: N/A		
	NO_2: Outside Carlsbad (350151005)		
	PM2.5: Hobbs-Jefferson (350450019)		
	PM10: Hobbs-Jefferson (350250008)		

	SO_2: N/A			
	Other:			
	Comments:	Note, CO and SO_2 sitewide modeling showed concentrations below the Significant Impact Levels for all averaging periods.		
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 **Dataset used: OS_CARLSBAD2014_2018**	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?		
	http://nationalmap.gov/viewer.html		

16-U: Modeling Files

Describe the modeling files:

File name (or folder and file name)	Pollutant(s)	Purpose (ROI/SIA, cumulative, culpability analysis, other)
Train I through IV_SILs	NO2, SO2, H2S, CO, PM2.5, PM10	SIL/ROI, cumulative
Train I through IV_SILs_Annual	NO2, SO	SIL/ROI
Train I through IV_PM_Surr	PM2.5, PM10	cumulative
Train I through IV_NO2 PSD	NO2	PSD Increment

16-V: PSD New or Major Modification Applications – Not Applicable			
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☒
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 (m)
CO 1-hr	2,375.95	N/A	N/A	2,203	4,578.95	14,997.5	30.5	583,968.9	3,570226.4	951.86
CO 8-hr	397.67	N/A	N/A	N/A	N/A	<SIL	N/A	583,968.9	3,570226.4	951.86
H_2S 1-hr	1.17	N/A	N/A	N/A	N/A	<SIL	N/A	583,848.3	3,570,528.6	948.75
SO_2 1-hr	7.04	N/A	N/A	N/A	N/A	<SIL	N/A	583,700.0	3,570,200.0	957.12
SO_2 3-hr	5.59	N/A	N/A	N/A	N/A	<SIL	N/A	583,800.0	3,570,100.0	952.58
SO_2 24-hr	2.53	N/A	N/A	N/A	N/A	<SIL	N/A	583,800.0	3,570,000.0	949.55
SO_2 Annual	0.18	N/A	N/A	N/A	N/A	<SIL	N/A	583,943.9	3,570,534.3	948.40
NO_2 1-hr	75.50	N/A	N/A	38.70	84.23	188	44.8	583,968.9	3,570226.4	951.86
NO_2 Annual	3.95	N/A	N/A	5	8.95	94	9.5	583,617.3	3,570,532.7	949.28
$PM_{2.5}$ 24-hr	2.13	16.71	0.25	13.40	30.36	35	86.7	583,868.3	3,570,225.8	952.81
$PM_{2.5}$ Annual	0.37	3.60	0.01	5.90	9.51	12	79.2	584,269.7	3,570,439.1	947.19
PM_{10} 24-hr	20.53	27.97	N/A	37.30	65.27	150	43.5	583,826.1	3,570,235.1	953.31

Please see attached modeling results table for detailed results and NO_2 PSD Increment results.

16-X: Summary/conclusions

1	A statement that modeling requirements have been satisfied and that the permit can be issued.
	Lucid Energy Delaware, LLC has demonstrated through this air dispersion modeling analysis that the proposed revisions to the existing facility neither cause nor contribute to an exceedance of the applicable standards.

Table 16-1: Significant Impacts Level Analyses and ROI's

Units	Criteria Pollutant	Averaging Period	Significance Level (ug/m^3)	NAAQS (ug/m^3)	GLC_{max} (ug/m^3)	GLC_{max} < Significance Level? If Yes, NAAQS is met (ug/m^3)	ROI (m)
Site-wide	NO_2	1-hour	7.5	188.03	75.50	**No**	15,250
Site-wide	NO_2	Annual	1.0	94.02	3.95	**No**	679.2
Site-wide	$PM_{2.5}$	24-hour	1.2	35	2.13	**No**	484.4
Site-wide	$PM_{2.5}$	Annual	0.2	12	0.37	**No**	172.0
Site-wide	PM_{10}	24-hour	5.0	150	20.53	**No**	288.5
Site-wide	CO	1-hour	2000	14,998	2,375.95	**No**	182.1
Site-wide	CO	8-hour	500	9,960	397.67	**Yes, no further analysis required**	0.0
Site-wide	SO_2	1-hour	7.8	196.4	7.04	**Yes, no further analysis required**	0.0
Site-wide	SO_2	3-hour	25.0	1,309.3	5.59	**Yes, no further analysis required**	0.0
Site-wide	SO_2	24-hour	5.0	261.9	2.53	**Yes, no further analysis required**	0.0
Site-wide	SO_2	Annual	1.0	52.4	0.18	**Yes, no further analysis required**	0.0
Site-wide	H_2S	1-hour	5.0	139.3	1.17	**Yes, no further analysis required**	0.0
Project Increases	$PM_{2.5}$	24-hour	1.2	35	1.19	**Yes, no further analysis required**	0.0
Project Increases	$PM_{2.5}$	Annual	0.2	12	0.12	**Yes, no further analysis required**	0.0

Table 16-2: N/NMAAQS Analyses

Units	Criteria Pollutant	Averaging Period	NAAQS (ug/m^3)	GLC_{max} (ug/m^3)	Background Concentration (ug/m^3)	Secondary $PM_{2.5}$ (ug/m^3)	GLC_{max} incl. Background conc. (ug/m^3)	GLC_{max} incl. Background conc. < NAAQS?	ROI (m)	Percent of Standard (%)
Site-wide	NO_2	1-hour	188.03	45.53	38.70	--	84.23	**Yes**	15,250	44.8
Site-wide	NO_2	Annual	94.02	3.95	5.00	--	8.95	**Yes**	679	9.5
Site-wide	$PM_{2.5}$	24-hour	35	16.71	13.40	0.25	30.36	**Yes**	484	86.7
Site-wide	$PM_{2.5}$	Annual	12	3.60	5.90	0.01	9.51	**Yes**	172	79.2
Site-wide	PM_{10}	24-hour	150	27.97	37.30	--	65.27	**Yes**	289	43.5
Site-wide	CO	1-hour	14997.5	2,375.95	2203	--	4578.95	**Yes**	182	30.5

Note:
1-hour NO_2 GLC_{max} is the high 8th high.
Annual NO_2 GLC_{max} is the high 1st high.
$PM_{2.5}$: 24-hour modeled concentrations is the high 8th high.
$PM_{2.5}$: Annual modeled concentrations is the high 1st high.
PM_{10}: 24-hour modeled concentrations is the high 2nd high.
CO: 1-hour modeled concentratio is high 1st high.

Background Concentrations:
1-hour and annual NO_2 background concentration added from ID: 5ZR, 350151005 Outside Carlsbad: Holland St., SE of Water Tank, Carlsbad, NM
24-hour and annual $PM_{2.5}$ background concentration added from ID: 5ZS, 350250008: Hobbs-Jefferson: 2320 N. Jefferson St., Hobbs, NM
24-hour PM_{10} background concentration added from ID: 5ZS, 350250008: Hobbs-Jefferson: 2320 N. Jefferson St., Hobbs, NM
1-hour CO background concentration added from ID: 350010023, Del Norte High School, 4700a San Mateo NE, Albuquerque, NM.

Surrounding Sources:
Surrouding Sources, in addition to background concentrations, for PM_{10} and $PM_{2.5}$ were added within 10km of the Road Runner Gas Processing Plant..
Surrounding source data was provided by NMED.

$PM_{2.5}$ Secondary Formation:

24-hr = ((NO_x emission rate (tpy) / 1155) + (SO_2 emission rate (tpy) / 229)) x 1.2 ug/m^3
= ((130.81 tpy NO_x / 1155) + (22.72 tpy SO_2 / 229) x 1.2 ug/m^3 = **0.25** **ug/m^3**

Annual = ((NO_x emission rate (tpy) / 3184) + (SO_2 emission rate (tpy) / 2289)) x 0.2 ug/m^3
= ((130.81 tpy NO_x / 3184) + (22.72 tpy SO_2 / 2289) x 0.2 ug/m^3 = **0.01** **ug/m^3**

Table 16-3: PSD Increments Analysis

Units	Criteria Pollutant	Averaging Period	Class I PSD Significance Level (ug/m^3)	Class I PSD Increment Level (ug/m^3)	$GLC_{Class\ I}$ (ug/m^3)	$GLC_{Class\ I}$ < Significance Level? If Yes, NAAQS is met	Class II PSD Increment (ug/m^3)	GLC_{max} (ug/m^3)	Secondary $PM_{2.5}$ (ug/m^3)	$GLC_{Class\ I}$ < PSD Class I Increment? (ug/m^3)	GLC_{max} < PSD Class II Increment? (ug/m^3)
Site-wide	NO_2	Annual	0.1	2.5	0.002	Yes	25.00	3.95	--	**Yes**	**Yes**

Note:

Modeled site-wide SO_2 concentrations are below the SIL for each averaging period; therefore, PSD Increments are not cosumed and a PSD Increment analysis is not required.

Site-wide and emission unit specific emission rates for $PM_{2.5}$ and PM_{10} decrease with this permitting action; therefore, a PSD Increment analysis is not required.

Project increases only (new sources), are below the SILs for PM.

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.

The Facility does not have a compliance test history at this point.

Section 18

Addendum for Streamline Applications

Do not print this section unless this is a streamline application.

Streamline Applications do not require a complete application. Submit Sections 1-A, 1-B, 1-D, 1-F, 1-G, 2-A, 2-C thru L, Sections 3 thru 8, Section 13, Section 18, Section 22, and Section 23 (Certification). Other sections may be required at the discretion of the Department. 20.2.72.202 NMAC Exemptions do not apply to Streamline sources. 20.2.72.219 NMAC revisions and modifications do not apply to Streamline sources, thus 20.2.72.219 type actions require a complete new application submittal. Please do not print sections of a streamline application that are not required.

Not Applicable

Section 19

Requirements for Title V Program

Do not print this section unless this is a Title V application.

Who Must Use this Attachment:

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

Not Applicable

Section 20

Other Relevant Information

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

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

No other relevant information is being submitted with this application.

Section 21

Addendum for Landfill Applications

Do not print this section unless this is a landfill application.

Not Applicable

Section 22: Certification

Company Name: **Lucid Energy Delaware, LLC**

I, **Matthew Eales**, 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 17 day of April, 2020, upon my oath or affirmation, before a notary of the State of New Mexico.

Matthew Eales
*Signature

April 17, 2020
Date

Matthew Eales
Printed Name

Vice President EHSR
Title

Scribed and sworn before me on this 17 day of April, 2020.

My authorization as a notary of the State of New Mexico expires on the 12th day of June, 2022.

Notary's Signature

April 17, 2022
Date

Wilma M. Harmon
Notary's Printed Name

OFFICIAL SEAL
WILMA M. HARMON
NOTARY PUBLIC, STATE OF NEW MEXICO
MY COMMISSION EXPIRES 6-12-2022

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