May 6, 2020

Ted Schooley
Permit Programs Manager
New Mexico Environnent Department Air Quality Bureau
525 Camino de los Marquez, Suite 1
Santa Fe, New Mexico, 87505-1816

Re: Application to Modify NSR Construction Permit 0339-M8
Harvest Four Corners, LLC – La Jara Compressor Station, A.I. No. 1010

Dear Mr. Schooley,

The **Harvest Four Corners, LLC (Harvest) La Jara Compressor Station** is authorized under **Construction Permit 0339-M8**, issued by the New Mexico Environment Department Air Quality Bureau (NMAQB) on November 6, 2018, as administratively revised in 339-M8-R1.

Harvest is proposing the following permit modifications:

- The discretion to replace either or both of its unit 1 and/or unit 2 Solar Centaur T-4002 gas turbine compressor engines with a Solar Centaur 40-4702S upgrade (units 8 and/or 9). The replacement(s) would take place during normally scheduled maintenance operations. Ambient air quality dispersion modeling demonstrates that the proposed replacement(s) would not result in an exceedance of any PSD increment levels; nor result in any violation of any ambient air quality standard. If implemented, the turbine replacement(s) ill result in a reduction of the nitrogen oxides (NO_X) and carbon monoxide (CO) Potential To Emit (PTE).

- Fuel flow rates and corresponding stack data are updated for turbine units 3, 6 and 7 for consistency with modeled worst-case pollutant dispersion characteristics included as part of the application.

- Removal of emission limits on the unit 4 emergency generator. Although the unit is a regulated emission source due to the applicability of 60 CFR 63, subpart ZZZZ, only operational and maintenance standards of the subpart apply to the engine.

- An increase in the allowable fuel sulfur content in the natural gas combusted at the facility based on the underlying fuel sulfur content inherent in the AP-42 sulfur dioxide (SO_2) emission factor for natural gas turbines.

- An increase in the monthly rolling 12-month total condensate throughput/truck loading to/from the condensate tanks to 6,500 barrels per year; and increase the allowable monthly rolling 12-month average 3-phase separator (unit 18) inlet pressure to 205.0 pounds per square inch, actual. The PTE for volatile organic compounds (VOC) is simultaneously decreased.

The facility PTE for NO_X and VOC is currently greater than 250 tpy, making it a major source under the 20.2.74 NMAC '*Permits - Prevention of Significant Deterioration*' (PSD) permitting program. Although major for PSD, the facility is not currently subject to PSD requirements, including BACT, and the proposed modification is a PSD minor modification. If the proposed changes are implemented, the facility emissions will be reduced to below the 250 tpy PSD thresholds and it will become a PSD minor source. The facility will remain a Title V major source subject to the 20.2.70 NMAC [Title V] Operating Permits program.

The emissions of Hazardous Air Pollutants (HAP) from both the current permitted and proposed facility are below 10 tpy per individual HAP and 25 tpy for total HAP. Therefore, the facility remains an area source of HAP.

In accordance with the instructions in the NMAQB Universal Air Quality Permit Application, one application hard copy original, one application hard copy review copy are provided, each with an enclosed CD containing the application electronic files. A separate hard copy ambient air quality dispersion modeling study with electronic files on CD is enclosed with the application review copy.

If any additional information is needed with regard to this application, please contact Mr. Kijun Hong of Harvest at (505) 632-4475.

Sincerely,

Lisa Killion

Lisa Killion
Sr. Environmental Scientist

Enclosures – One (1) hard copy application original with electronic files on CD (including dispersion modeling files on a separate CD)
One (1) hard copy application review copy with electronic files on CD
One (1) ambient air quality dispersion modeling report with electronic files on CD

cc: Kijun Hong, Harvest (electronic copy)
Bobby Myers, Cirrus (electronic copy)

NEW MEXICO 20.2.72.219.D(1) NMAC APPLICATION TO MODIFY NSR CONSTRUCTION PERMIT 0339-M8

LA JARA COMPRESSOR STATION

Submitted By:

Harvest Four Corners, LLC

1755 Arroyo Drive
Bloomfield, New Mexico 87413

Prepared By:

Cirrus Consulting, LLC
951 Diestel Road
Salt Lake City, Utah 84105
(801) 484-4412

May 2020

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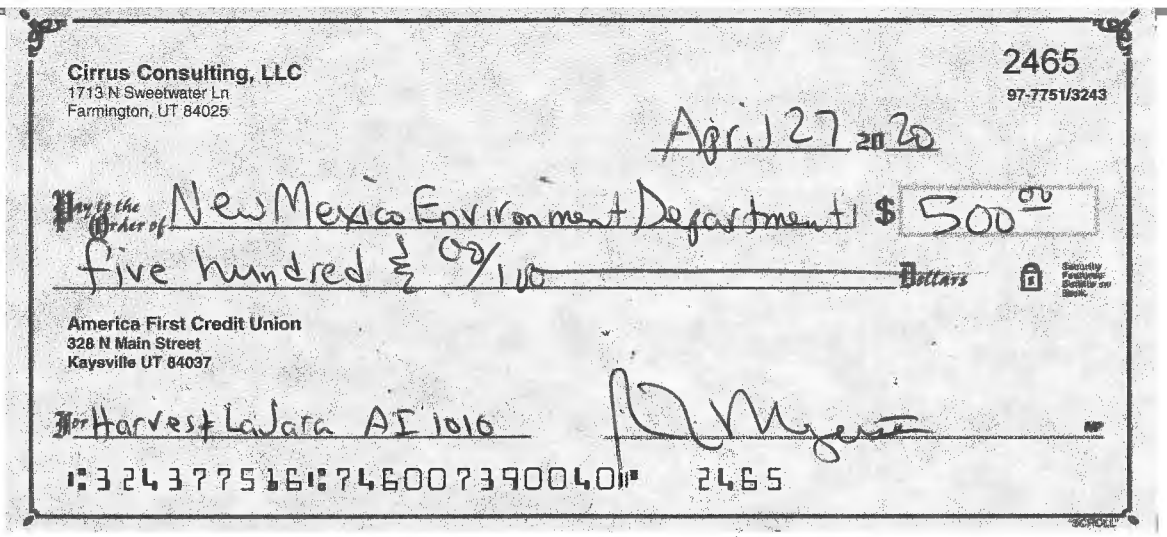

Cirrus Consulting, LLC
1713 N Sweetwater Ln
Farmington, UT 84025

2465
97-7751/3243

April 27 2020

Pay to the Order of New Mexico Environment Department $ 500.00

five hundred & 00/100 Dollars

America First Credit Union
328 N Main Street
Kaysville UT 84037

For Harvest LaJara AI 1016

⑆324377516⑆746007390040⑈ 2465

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 ☐ 20.2.72 NMAC application or revision ☐ 20.2.72.300 NMAC Streamline application
Title V Source: ☐ Title V (new) ☐ Title V renewal ☐ TV minor mod. ☒ TV significant mod. TV Acid Rain: ☐ New ☐ Renewal
PSD Major Source: ☐ PSD major source (new) ☒ minor modification to a PSD source ☐ a PSD major modification

Acknowledgements:

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

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

☒ Check No.: **2465** in the amount of **$500.00**

☒ 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(1) 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.): **1010**	Updating Permit/NOI #: **339-M8-R1**
1	Facility Name: La Jara Compressor Station	Plant primary SIC Code (4 digits): 1389	
		Plant NAIC code (6 digits): 213112	
a	Facility Street Address (If no facility street address, provide directions from a prominent landmark): From Bloomfield, drive 37 miles east on Hwy 64. Turn left on Hwy 527 and drive 7.8 miles. Turn right on Rosa Road and drive 3.3 miles. Turn left and drive 1.3 miles to the station.		
2	Plant Operator Company Name: Harvest Four Corners, LLC	Phone/Fax: 505-632-4600 / 505-632-4782	

a	Plant Operator Address: 1755 Arroyo Drive, Bloomfield, NM 87413	
b	Plant Operator's New Mexico Corporate ID or Tax ID: 76-0451075	
3	Plant Owner(s) name(s): Harvest Four Corners, LLC	Phone/Fax: 505-632-4600 / 505-632-4782
a	Plant Owner(s) Mailing Address(s): 1755 Arroyo Drive, Bloomfield NM 87413	
4	Bill To (Company): Harvest Four Corners, LLC	Phone/Fax: 505-632-4600 / 505-632-4782
a	Mailing Address: 1755 Arroyo Drive, Bloomfield NM 87413	E-mail: N/A
5	☐ Preparer: ☑ Consultant: Lisa Killion, Cirrus Consulting, LLC	Phone/Fax: 505-466-1790 / 505-466-4599
a	Mailing Address:	E-mail: lkillion@cirrusllc.com
6	Plant Operator Contact: Kijun Hong	Phone/Fax: 505-632-4475 / 505-632-4782
a	Address: 1755 Arroyo Drive, Bloomfield NM 87413	E-mail: khong@harvestmidstream.com
7	Air Permit Contact: Kijun Hong	Title: Environmental Specialist
a	E-mail: khong@harvestmidstream.com	Phone/Fax: 505-632-4475 / 505-632-4782
b	Mailing Address: 1755 Arroyo Drive, Bloomfield NM 87413	
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? [x] Yes ☐ No	
5	If Yes to question 3, has this facility been modified (see 20.2.72.7.P NMAC) or the capacity increased since 8/31/1972? ☐Yes ☐No [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: P-023-R3-M1 (Title V application P023-R3-M2 is under NMED review)
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: 0339-M8-R1
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: 20.8 mmcfh[(a)]	Daily: 500 mmcfd[(a)]	Annually: 182,500 mmcfy[(a)]
b	Proposed	Hourly: 20.8 mmcfh[(a)]	Daily: 500 mmcfd[(a)]	Annually: 182,500 mmcfy[(a)]
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: 20.8 mmcfh[(a)]	Daily: 500 mmcfd[(a)]	Annually: 182,500 mmcfy[(a)]
b	Proposed	Hourly: 20.8 mmcfh[(a)]	Daily: 500 mmcfd[(a)]	Annually: 182,500 mmcfy[(a)]

[a] Station capacity is a direct function of available horsepower. The throughput is therefore dependent on atmospheric temperature, gas temperature, atmospheric pressure, gas pressure, relative humidity and gas quality, as well as other factors. The "capacity" expressed in the application is a nominal quantity, neither an absolute maximum nor an average. The actual throughput will vary from the nominal amount.

Section 1-D: Facility Location Information

1	Section: 17	Range: 06W	Township: 30N	County: Rio Arriba	Elevation (ft): 6,325
2	UTM Zone: ☐ 12 or ☒ 13			Datum: ☐ NAD 27 ☐ NAD 83 ☒ WGS 84	
a	UTM E (in meters, to nearest 10 meters): 277,710 m			UTM N (in meters, to nearest 10 meters): 4,077,505 m	
b	**AND** Latitude (deg., min., sec.): 36° 49' 02"			Longitude (deg., min., sec.): -107° 29' 32"	
3	Name and zip code of nearest New Mexico town: Navajo Dam, NM 87419				
4	Detailed Driving Instructions from nearest NM town (attach a road map if necessary): See Section 1-A.1.a.				
5	The facility is ~12 (distance) miles east (direction) of the U.S. Post Office in Navajo Dam, NM (nearest town).				
6	Status of land at facility (check one): ☐ Private ☐ Indian/Pueblo ☒ Federal BLM ☐ Federal Forest Service ☐ Other (specify)				
7	List all municipalities, Indian tribes, and counties within a ten (10) mile radius (20.2.72.203.B.2 NMAC) of the property on which the facility is proposed to be constructed or operated: None; none; Rio Arriba County, NM & San Juan County, NM				
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)? ☐ Yes ☐ No (20.2.72.206.A.7 NMAC) If yes, list all with corresponding distances in kilometers: N/A				
9	Name nearest Class I area: Weminuche Wilderness				
10	Shortest distance (in km) from facility boundary to the boundary of the nearest Class I area (to the nearest 10 meters): 67.08 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: ~3,700 meters				
12	Method(s) used to delineate the Restricted Area: Fencing "**Restricted Area**" is an area to which public entry is effectively precluded. Effective barriers include continuous fencing, continuous walls, or other continuous barriers approved by the Department, such as rugged physical terrain with steep grade that would require special equipment to traverse. If a large property is completely enclosed by fencing, a restricted area within the property may be identified with signage only. Public roads cannot be part of a Restricted Area.				
13	Does the owner/operator intend to operate this source as a portable stationary source as defined in 20.2.72.7.X NMAC? ☐ Yes ☒ No A portable stationary source is not a mobile source, such as an automobile, but a source that can be installed permanently at one location or that can be re-installed at various locations, such as a hot mix asphalt plant that is moved to different job sites.				
14	Will this facility operate in conjunction with other air regulated parties on the same property? ☒ No ☐ Yes If yes, what is the name and permit number (if known) of the other facility?				

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

1	Facility **maximum** operating ($\frac{\text{hours}}{\text{day}}$): 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: N/A	AM PM	End: N/A	AM PM			
3	Month and year of anticipated start of construction: N/A						
4	Month and year of anticipated construction completion: N/A						
5	Month and year of anticipated startup of new or modified facility: N/A						
6	Will this facility operate at this site for more than one year? ☒ Yes ☐ No						

Section 1-F: Other Facility Information

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

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

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

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

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

1	Responsible Official (R.O.) (20.2.70.300.D.2 NMAC): Travis Jones		Phone: 713-289-2630
a	R.O. Title: EH&S Manager	R.O. e-mail: trjones@harvestmidstream.com	
b	R. O. Address: 1111 Travis Street, Houston, TX 77002		
2	Alternate Responsible Official (20.2.70.300.D.2 NMAC): TBD		Phone: TBD
a	A. R.O. Title: TBD	A. R.O. e-mail: TBD	
b	A. R. O. Address: TBD		
3	Company's Corporate or Partnership Relationship to any other Air Quality Permittee (List the names of any companies that have operating (20.2.70 NMAC) permits and with whom the applicant for this permit has a corporate or partnership relationship): N/A		
4	Name of Parent Company ("Parent Company" means the primary name of the organization that owns the company to be permitted wholly or in part.): Hilcorp Energy Company		
a	Address of Parent Company: 1111 Travis Street, Houston, TX 77002		
5	Names of Subsidiary Companies ("Subsidiary Companies" means organizations, branches, divisions or subsidiaries, which are owned, wholly or in part, by the company to be permitted.): N/A		
6	Telephone numbers & names of the owners' agents and site contacts familiar with plant operations: N/A		
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: Yes. Colorado (20.2 km), Southern Ute Tribe (20.2 km), Navajo Nation Tribal Lands (52 km); Navajo checkerboard lands (29.2 km), Jicarilla Apache Tribe (26.3 km), and Ute Mountain Tribe (68 km).		

Section 1-I – Submittal Requirements

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

Hard Copy Submittal Requirements:

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

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

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

Electronic files sent by (check one):

☒ **CD/DVD attached to paper application**

☐ secure electronic transfer. Air Permit Contact Name_____

Email_____

Phone number _____

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.
1 Field Unit 3	Natural Gas Fired Turbine	Solar	T-4002	OHB16-C1819 (Pkg # 3020005)	3961 hp	3123 hp	1/1/1972 1/1/1972	N/A 1	20200201	Existing (unchanged) To be Removed New/Additional Replacement Unit To Be Modified **X To be Replaced**	N/A	N/A
2 Field Unit 4	Natural Gas Fired Turbine	Solar	T-4002	OHB16-C2641 (Pkg # 3020004)	3961 hp	3123 hp	1/1/1972 1/1/1972	N/A 2	20200201	Existing (unchanged) To be Removed New/Additional Replacement Unit To Be Modified **X To be Replaced**	N/A	N/A
3 Field Unit 2	Natural Gas Fired Turbine	Solar	T-4702	OHG17-C5915 (Pkg # CC81338)	4680 hp	3779 hp	8/1/1981 8/1/1981	N/A 3	20200201	Existing (unchanged) To be Removed New/Additional Replacement Unit **X To Be Modified** To be Replaced	N/A	N/A
6 Field Unit 1	Natural Gas Fired Turbine	Solar	T-4702S	OHB20-C0547 (Pkg # DCC0164)	4680 hp	3934 hp	1/1/1999 1/1/1999	N/A 6	20200201	Existing (unchanged) To be Removed New/Additional Replacement Unit **X To Be Modified** To be Replaced	N/A	N/A
7 Field Unit 1A	Natural Gas Fired Turbine	Solar	T-4702S	OHC20-C4653 (Pkg # DCC0165)	4680 hp	3934 hp	1/1/1999 1/1/1999	N/A 7	20200201	Existing (unchanged) To be Removed New/Additional Replacement Unit **X To Be Modified** To be Replaced	N/A	N/A
8 Field Unit 3	Natural Gas Fired Turbine	Solar	T-4702S	TBD	4680 hp	3795 hp	TBD TBD	N/A 1	20200201	Existing (unchanged) To be Removed New/Additional **X Replacement Unit** To Be Modified To be Replaced	N/A	**1**
9 Field Unit 4	Natural Gas Fired Turbine	Solar	T-4702S	TBD	4680 hp	3795 hp	TBD TBD	N/A 2	20200201	Existing (unchanged) To be Removed New/Additional **X Replacement Unit** To Be Modified To be Replaced	N/A	**2**
4	Recip. Internal Combustion Engine	Waukesha	F3521G	RU18456 (Pkg # 361832)	515 hp	440 hp	3/13/1981 3/13/1981	N/A 4	20100202	Existing (unchanged) To be Removed New/Additional Replacement Unit **X To Be Modified** To be Replaced	4SRB	N/A
18[5]	3-Phase Separator	Peerless	14-248	U-197	N/A	N/A	N/A N/A	N/A N/A	31000129	Existing (unchanged) To be Removed New/Additional Replacement Unit **X To Be Modified** To be Replaced	N/A	N/A
SSM [6]	Startup, Shutdown & Maintenance	N/A	N/A	N/A	N/A	N/A	N/A N/A	N/A N/A	31000299	Existing (unchanged) To be Removed New/Additional Replacement Unit **X To Be Modified** To be Replaced	N/A	N/A
P1[7]	Trunk S Loop Pig Launcher	TDW	N/A	N/A	N/A	N/A	N/A N/A	N/A N/A	31000299	**X Existing (unchanged)** To be Removed New/Additional Replacement Unit To Be Modified To be Replaced	N/A	N/A
P2[7]	Trunk S Loop Pig Receiver	TDW	N/A	N/A	N/A	N/A	N/A N/A	N/A N/A	31000299	**X Existing (unchanged)** To be Removed New/Additional Replacement Unit To Be Modified To be Replaced	N/A	N/A
F1	Equipment Leaks	N/A	N/A	N/A	N/A	N/A	N/A N/A	N/A N/A	31088811	**X Existing (unchanged)** To be Removed New/Additional Replacement Unit To Be Modified To be Replaced	N/A	N/A
M1	Malfunctions	N/A	N/A	N/A	N/A	N/A	N/A N/A	N/A N/A	31000299	Existing (unchanged) To be Removed New/Additional Replacement Unit **X To Be Modified** To be Replaced	N/A	N/A

Unit Number[1]	Source Description	Make	Model #	Serial #	Manufacturer's Rated Capacity[3] (Specify Units)	Requested Permitted Capacity[3] (Specify Units)	Date of Manufacture[2] / Date of Construction/ Reconstruction[2]	Controlled by Unit # / Emissions vented to Stack #	Source Classification Code (SCC)	For Each Piece of Equipment, Check One	RICE Ignition Type (CI, SI, 4SLB, 4SRB, 2SLB)[4]	Replacing Unit No.
T1[5]	Condensate Storage Tank	Pesco	N/A	T-1987	400 bbl	400 bbl	1/1/1997 1/1/1997	N/A N/A	40400311	Existing (unchanged) To be Removed New/Additional Replacement Unit **X To Be Modified** To be Replaced	N/A	N/A
T2[5]	Condensate Storage Tank	Pesco	N/A	T-1986	400 bbl	400 bbl	1/1/1997 1/1/1997	N/A N/A	40400311	Existing (unchanged) To be Removed New/Additional Replacement Unit **X To Be Modified** To be Replaced	N/A	N/A
T3[5]	Condensate Storage Tank	Pesco	N/A	T-1985	400 bbl	400 bbl	1/1/1997 1/1/1997	N/A N/A	40400311	Existing (unchanged) To be Removed New/Additional Replacement Unit **X To Be Modified** To be Replaced	N/A	N/A
L1[5]	Truck Loading (condensate)	N/A	N/A	N/A	N/A	N/A	N/A N/A	N/A N/A	31000299	Existing (unchanged) To be Removed New/Additional Replacement Unit **X To Be Modified** To be Replaced	N/A	N/A

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

[2] Specify dates required to determine regulatory applicability.

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

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

[5] The VOC emission limits (including flash + tank working/breathing losses) from the separator, condensate storage tanks, and condensate loading activities are aggregated under a single VOC emission source "T1 to T3, L1, 18" in Operating Permit P023-R3, Table A.106. No changes are sought.

[6] "SSM" is described as "1Compressor and Associated Piping Blowdowns during Routine and Predictable Startup, Shutdown, and/or Maintenance (SSM)" in Operating Permit P023-R3.

[7] The VOC emission limits from the pig launching and pig receiving activities are aggregated under a single emission source "P1 and P2" in Operating Permit P023-R3, Table A.107. No changes are sought.

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. / Serial No.	Max Capacity / Capacity Units	List Specific 20.2.72.202 NMAC Exemption (e.g. 20.2.72.202.B.5) / Insignificant Activity citation (e.g. IA List Item #1.a)	Date of Manufacture /Reconstruction[2] / Date of Installation /Construction[2]	For Each Piece of Equipment, Check Onc
5	Fuel Gas Heater	Sivalls	1H-246	0.5	20.2.72.202.B(5) NMAC		X Existing (unchanged) To be Removed New/Additional Replacement Unit To Be Modified To be Replaced
				MMBtu/hr	Insignificant Activity Item No. 1		
T4	Produced Water Storage Tank			80	20.2.72.202.B(5) NMAC		X Existing (unchanged) To be Removed New/Additional Replacement Unit To Be Modified To be Replaced
				bbl	Insignificant Activity Item No. 1		
T5 & T6	Lube Oil Storage Tank			315	20.2.72.202.B(2) NMAC		X Existing (unchanged) To be Removed New/Additional Replacement Unit To Be Modified To be Replaced
				gal	Insignificant Activity Item No. 5		
T7	Lube Oil Storage Tank			350	20.2.72.202.B(2) NMAC		X Existing (unchanged) To be Removed New/Additional Replacement Unit To Be Modified To be Replaced
				gal	Insignificant Activity Item No. 5		
T8	Used Oil Storage Tank			882	20.2.72.202.B(2) NMAC		X Existing (unchanged) To be Removed New/Additional Replacement Unit To Be Modified To be Replaced
				gal	Insignificant Activity Item No. 5		
T10	Methanol Storage Tank			500	20.2.72.202.B(5) NMAC		X Existing (unchanged) To be Removed New/Additional Replacement Unit To Be Modified To be Replaced
				bbl	Insignificant Activity Item No. 1		
T11	Corrosion Inhibitor (CGO49)			750	20.2.72.202.B(5) NMAC		X Existing (unchanged) To be Removed New/Additional Replacement Unit To Be Modified To be Replaced
				gal	Insignificant Activity Item No. 1		
T12	Diesel Tank			300	20.2.72.202.B(2) NMAC		X Existing (unchanged) To be Removed New/Additional Replacement Unit To Be Modified To be Replaced
				gal	Insignificant Activity Item No. 5		
T13	Biocide (Bactron K-87)			125	No VOCs or HAPs:		X Existing (unchanged) To be Removed New/Additional Replacement Unit To Be Modified To be Replaced
				gal	Trivial Activities List Item. No. 1		
T14	Transmission Fluid Storage Tank			150	No VOCs or HAPs:		X Existing (unchanged) To be Removed New/Additional Replacement Unit To Be Modified To be Replaced
				gal	Trivial Activities List Item. No. 1		
L2	Truck Loading (produced water)			N/A	20.2.72.202.B(5) NMAC		X Existing (unchanged) To be Removed New/Additional Replacement Unit To Be Modified To be Replaced
				N/A	Insignificant Activity Item No. 1		
							Existing (unchanged) To be Removed New/Additional Replacement Unit To Be Modified To be Replaced
							Existing (unchanged) To be Removed New/Additional Replacement Unit To Be Modified To be Replaced
							Existing (unchanged) To be Removed New/Additional Replacement Unit To Be Modified To be Replaced
							Existing (unchanged) To be Removed New/Additional Replacement Unit To Be Modified To be Replaced
							Existing (unchanged) To be Removed New/Additional Replacement Unit To Be Modified To be Replaced

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

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

Table 2-C: Emissions Control Equipment

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

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

[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)

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

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

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

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

Table 2-E: Requested Allowable Emissions

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

Unit No.	NOx		CO		VOC		SOx		PM[1]		PM10[1]		PM2.5[1]		H_2S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
1[2]	15.07	66.00	14.41	63.10	4.41	19.30	0.10	0.44	0.19	0.85	0.19	0.85	0.19	0.85	-	-	-	-
2[3]	15.07	66.00	14.41	63.10	4.41	19.30	0.10	0.44	0.19	0.85	0.19	0.85	0.19	0.85	-	-	-	-
3	24.06	105.39	4.39	19.21	2.51	11.00	0.12	0.54	0.24	1.04	0.24	1.04	0.24	1.04	-	-	-	-
6	3.64	15.93	4.43	19.40	1.27	5.56	0.12	0.54	0.24	1.05	0.24	1.05	0.24	1.05	-	-	-	-
7	3.64	15.93	4.43	19.40	1.27	5.56	0.12	0.54	0.24	1.05	0.24	1.05	0.24	1.05	-	-	-	-
8[4]	3.52	15.43	4.29	18.79	1.23	5.38	0.12	0.52	0.23	1.02	0.23	1.02	0.23	1.02	-	-	-	-
9[5]	3.52	15.43	4.29	18.79	1.23	5.38	0.12	0.52	0.23	1.02	0.23	1.02	0.23	1.02	-	-	-	-
SSM	-	-	-	-	Not specified	32.39	-	-	-	-	-	-	-	-	-	-	-	-
P1 & P2	-	-	-	-	Not specified	10.91	-	-	-	-	-	-	-	-	-	-	-	-
T1 to T3, L1, 18[6]	-	-	-	-	Not specified	48.54	-	-	-	-	-	-	-	-	-	-	-	-
F1	-	-	-	-	1.4	5.92	-	-	-	-	-	-	-	-	-	-	-	-
M1	-	-	-	-	Not specified	10.00	-	-	-	-	-	-	-	-	-	-	-	-
Totals[7]	**74.14**	**272.60**	**50.84**	**186.59**	**89.62**	**168.65**	0.61	2.64	1.24	5.16	1.24	5.16	1.24	5.16	-	-	-	-
Totals[8]	62.61	222.08	40.73	142.29	86.43	154.64	0.59	2.58	1.21	5.04	1.21	5.04	1.21	5.04	-	-	-	-
Totals[9]	51.06	171.50	30.61	97.98	83.25	140.72	**0.61**	**2.67**	**1.25**	**5.21**	**1.25**	**5.21**	**1.25**	**5.21**	-	-	-	-

[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).

[2] Turbine unit 1 emissions if turbine unit 1 is not replaced by unit 8 (no change).

[3] Turbine unit 2 emissions if turbine unit 2 is not replaced by unit 9 (no change).

[4] Turbine emissions if turbine unit 8 replaces turbine unit 1.

[5] Turbine emissions if turbine unit 9 replaces turbine unit 2.

[6] The 'T1 to T3, L1, 18' (aggregated source) emissions include a 25% safety factor.

[7] **Scenario 0:** Emission totals if **no turbines are replaced = REQUESTED ALLOWABLE NOX, CO & VOC EMISSIONS**

[8] **Scenarios 1 & 2**: Emission totals if **only one turbine** (unit 1 or unit 2) **is replaced** with turbine unit 8 or 9, respectively.

[9] **Scenario 3**: Emission totals if **both turbines** (**units 1 and 2) are replaced = REQUESTED ALLOWABLE SO2 & PM EMISSIONS**

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

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

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

Unit No.	NOx		CO		VOC		SOx		PM[2]		PM10[2]		PM2.5[2]		H_2S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
SSM	-	-	-	-	unspecified	32.39	-	-	-	-	-	-	-	-	-	-	-	-
M1	-	-	-	-	unspecified	10.00	-	-	-	-	-	-	-	-	-	-	-	-
P1 & P2	-	-	-	-	unspecified	10.91	-	-	-	-	-	-	-	-	-	-	-	-
Totals	-	-	-	-	not specified	42.39	-	-	-	-	-	-	-	-	-	-	-	-

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

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

[3] The VOC emission rate is carried forward fromConstruction Permit 0339-M8

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

X 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

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

Table 2-H: Stack Exit Conditions

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

Stack Number	Serving Unit Number(s) from Table 2-A	Orientation (H-Horizontal V=Vertical)	Rain Caps (Yes or No)	Height Above Ground (ft)	Temp. (F)	Flow Rate		Moisture by Volume (%)	Velocity (ft/sec)	Inside Diameter (ft)
						(acfs)	(dscfs)			
1	1	V	No	21	788	1204			245.3	2.5
2	2	V	No	21	788	1204			245.3	2.5
3	3	V	No	32	797	1146			34.5	6.5
6	6	V	No	39	789	1200.0			244.4	2.5
7	7	V	No	39	789	1200.0			244.4	2.5
8	8	V	No	21	811	1242.8			253.2	2.5
9	9	V	No	21	811	1242.8			253.2	2.5
4	4	V	No	25	1053	37			270.4	0.4

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[1]		Acetaldehyde X HAP or TAP		Formaldehyde X HAP or TAP		n-Hexane X HAP or TAP		Provide Pollutant Name Here HAP or TAP		Provide Pollutant Name Here HAP or TAP		Provide Pollutant Name Here HAP or TAP		Provide Pollutant Name Here HAP or TAP		Provide Pollutant Name Here HAP or TAP	
		lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
1[1]	1[1]	0.3	1.3	0.1	0.5	0.1	0.5	-	-										
2[2]	2[2]	0.3	1.3	0.1	0.5	0.1	0.5	-	-										
3	3	0.3	1.5	0.1	0.6	0.1	0.6	-	0.1										
6	6	0.4	1.6	0.2	0.7	0.1	0.6	-	0.1										
7	7	0.4	1.6	0.2	0.7	0.1	0.6	-	0.1										
8[3]	8[3]	0.3	1.5	0.1	0.6	0.1	0.6	-	0.1										
9[4]	9[4]	0.3	1.5	0.1	0.6	0.1	0.6	-	0.1										
SSM	SSM	-	0.8	-	-	-	-	-	0.6										
P1 & P2	P1 & P2	-	0.3	-	-	-	-	-	0.2										
T1 to T3, L1, 18[5]	T1 to T3, L1, 18[5]	-	6.5	-	-	-	-	-	6.0										
F1	F1	-	0.1	-	-	-	-	-	0.1										
M1	M1	-	0.2	-	-	-	-	-	0.2										
Totals[6]		16.6	15.1	0.7	3.0	0.7	2.9	14.2	7.3										
Totals[7]		16.7	15.4	0.7	3.1	0.8	3.1	14.2	7.3										
Totals[8]		**16.8**	**15.6**	**0.7**	**3.2**	**0.8**	**3.2**	**14.2**	**7.3**										

[1] Turbine unit 1 emissions if turbine unit 1 is not replaced by unit 8 (no change).

[2] Turbine unit 2 emissions if turbine unit 2 is not replaced by unit 9 (no change).

[3] Turbine emissions if turbine unit 8 replaces turbine unit 1.

[4] Turbine emissions if turbine unit 9 replaces turbine unit 2.

[5] The 'T1 to T3, L1, 18' (aggregated source) emissions include a 25% safety factor.

[6] **Scenario 0: Emission totals if no turbine is replaced (maximum worst-case emissions).**

[7] **Scenarios 1 & 2**: Emission totals if **only one turbine** (unit 1 or unit 2) **is replaced** with turbine unit 8 or 9, respectively.

[8] **Scenario 3**: Emission totals if **both turbines** (**units 1 and 2) are replaced** with units 8 and 9, respectively.

Table 2-J: Fuel

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

Unit No.	Fuel Type (low sulfur Diesel, ultra low sulfur diesel, Natural Gas, Coal, …)	Fuel Source: purchased commercial, pipeline quality natural gas, residue gas, raw/field natural gas, process gas (e.g. SRU tail gas) or other	Specify Units				
			Lower Heating Value	Hourly Usage	Annual Usage	% Sulfur	% Ash
1	Natural gas	Raw/Field Natural Gas	900 Btu/scf	32.775 Mscf	287.11 MMscf	--	--
2	Natural gas	Raw/Field Natural Gas	900 Btu/scf	32.775 Mscf	287.11 MMscf	--	--
3	Natural gas	Raw/Field Natural Gas	900 Btu/scf	39.931 Mscf	349.80 MMscf	--	--
6	Natural gas	Raw/Field Natural Gas	900 Btu/scf	40.345 Mscf	353.43 MMscf	--	--
7	Natural gas	Raw/Field Natural Gas	900 Btu/scf	40.345 Mscf	353.43 MMscf	--	--
8	Natural gas	Raw/Field Natural Gas	900 Btu/scf	39.122 Mscf	308.44 MMscf	--	--
9	Natural gas	Raw/Field Natural Gas	900 Btu/scf	39.122 Mscf	308.44 MMscf	--	--
4	Natural gas	Raw/Field Natural Gas	900 Btu/scf	3.573 Mscf	1.79 MMscf	--	--

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)
T1	40400311	Condensate	Hydrocarbon liquids	5.53	67.505	67.36	4.6354	80.79	6.0444
T2	40400311	Condensate	Hydrocarbon liquids	5.53	67.505	67.36	4.6354	80.79	6.0444
T3	40400311	Condensate	Hydrocarbon liquids	5.53	67.505	67.36	4.6354	80.79	6.0444
T4	40400315	Produced Water	Water; <1% hydrocarbon liquids	8.3	N/A*	N/A*	N/A*	N/A*	N/A*
T5 & T6	40400313	Lube Oil	Lube Oil	Exempt source under 20.2.72.202.B(2) NMAC (Vapor pressure < 0.2 PSI)					
T7	40400313	Lube Oil	Lube oil	Exempt source under 20.2.72.202.B(2) NMAC (Vapor pressure < 0.2 PSI)					
T8	40400313	Used Oil	Used Lube Oil	Exempt source under 20.2.72.202.B(2) NMAC (Vapor pressure < 0.2 PSI)					
T10	40700816	Methanol	Methanol	6.6	32.04	64.94	1.68	76.64	2.39
T11	40400314	Corrosion Inhibitor	Corrosion Inhibitor	7.15	41.54	64.94	1.21	76.64	1.68
T12	40400316	Diesel	Diesel	Exempt source under 20.2.72.202.B(2) NMAC (Vapor pressure < 0.2 PSI)					
T13	40400314	Biocide	Biocide	Not a source of regulated emissions					
T14		Transmission Fluid	Transmission fluid	Not a source of regulated emissions					
					* N/A: The emission calculations do not yield this data.				

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			
T1	1997	Condensate		FX	400	63.6	3.66	3.24	MG	MG	Good	91,000	5.4
T2	1997	Condensate		FX	400	63.6	3.66	3.24	MG	MG	Good	91,000	5.4
T3	1997	Condensate		FX	400	63.6	3.66	3.24	MG	MG	Good	91,000	5.4
T4		Produced Water		N/A	80	12.7	N/A*	N/A*	N/A*	N/A*	N/A*	40,320	12
T5 & T6		Lube Oil		FX	7.5	1.2	Exempt source under 20.2.72.202.B(2) NMAC (Vapor pressure < 0.2 PSI)						
T7		Lube Oil		FX	8.3	1.3	Exempt source under 20.2.72.202.B(2) NMAC (Vapor pressure < 0.2 PSI)						
T8		Used Oil		FX	21.0	3.3	Exempt source under 20.2.72.202.B(2) NMAC (Vapor pressure < 0.2 PSI)						
T10		Methanol		FX	500.0	79.5	4.6	0.05	LG	LG	Good	59,487	3
T11		Corrosion Inhibitor		FX	17.9	2.8	1.0	0.49	LG	LG	Good	9,000	12
T12		Diesel		FX	7.1	1.1	Exempt source under 20.2.72.202.B(2) NMAC (Vapor pressure < 0.2 PSI)						
T13		Biocide		FX	3.0	0.5	Not a source of regulated emissions						
T14		Transmission fluid		FX	3.6	0.6	Not a source of regulated emissions						
							* N/A: The emission calculations do not yield this data.						

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)**
Low pressure natural gas	C1-C6+	Gas	182,500 mmcfy[1]	High pressure natural gas	C1-C6+	Gas	182,500 mmcfy[1]
Condensate	Mixed HC	Liquid	273,000 gal/yr	Condensate	Mixed HC	Liquid	273,000 gal/yr
Produced water	H2O + trace of HC	Liquid	40,320 gal/yr	Produced water	H2O + trace of HC	Liquid	40,320 gal/yr

[1] The material processed and material produced are both a direct function of available horsepower. The material processing and production rates are therefore dependent on atmospheric temperature and pressure, gas temperature and pressure, relative humidity and gas quality, was well as other factors. The values expressed above are a nominal quantities (with a safety factor), neither an absolute maximum, nor an average. Actual values will vary from the nominal amount.

Table 2-N: CEM Equipment

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

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

Table 2-O: Parametric Emissions Measurement Equipment

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

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

Table 2-P: Green House 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.

Unit No.		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**							
1 or 8 (worst case)	**mass GHG**	20,002.7	3.77E-02	3.77E-01								20003.1	-
	CO_2e	20,002.7	11.2	9.4								-	20023.31
2 or 9 (worst case)	**mass GHG**	20,002.7	3.77E-02	3.77E-01								20003.1	-
	CO_2e	20,002.7	11.2	9.4								-	20023.3
3	**mass GHG**	20,417.4	3.85E-02	3.85E-01								20417.8	-
	CO_2e	20,417.4	11.5	9.6								-	20438.45
6	**mass GHG**	20,627.6	3.89E-02	3.89E-01								20627.98	-
	CO_2e	20,627.6	11.6	9.7								-	20648.9
7	**mass GHG**	20,627.6	3.89E-02	3.89E-01								20627.98	-
	CO_2e	20,627.6	11.6	9.7								-	20648.9
4	**mass GHG**	104.4	1.97E-04	1.97E-03								104.41	-
	CO_2e	104.4	0.1	0.0								-	104.5
5	**mass GHG**	284.0	5.35E-04	5.35E-03								284.05	-
	CO_2e	284.0	0.16	0.13								-	284.3
SSM	**mass GHG**	6.7	0.0	121.9								128.6	-
	CO2e	6.7	0.0	3,047.9								-	3054.6
P1 & P2	**mass GHG**	2.3	0.0	41.1								43.3	-
	CO_2e	2.3	0.0	1,026.3								-	1028.5
F1	**mass GHG**	0.7	0.0	12.3								13.0	-
	CO2e	0.7	0.0	308.7								-	309.4

Unit No.		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**							
M1	**mass GHG**	2.1	0.0	37.6								39.7	-
	CO_2e	2.1	0.0	940.9								-	943.0
Separtors, Storage Tanks, L1	**mass GHG**	0.6	0.0	2.7								3.3	-
	CO2e	0.6	0.0	67.0								-	67.6
L1	**mass GHG**	0.0	0.0	0.0								0.0	-
	CO_2e	0.0	0.0	0.0								-	0.0
Centrif. Com-pressors	**mass GHG**	38.4	0.0	699.9								738.3	-
	CO2e	38.4	0.0	17,496.3								-	17534.8
Pneumatic Devices	**mass GHG**	1.2	0.0	22.4								23.7	-
	CO_2e	1.2	0.0	560.7								-	561.9
Pumps	**mass GHG**	0.1	0.0	2.0								2.1	-
	CO2e	0.1	0.0	50.8								-	50.9
	mass GHG											0.0	-
	CO_2e											-	0.0
	mass GHG											0.0	-
	CO_2e											-	0.0
	mass GHG											0.0	-
	CO_2e											-	0.0
	mass GHG											0.0	-
	CO_2e											-	0.0
Total[6]	**mass GHG**	102,118.4	0.19	941.87								103,060.4	-
	CO_2e	102,118.4	57.32	23,546.7								-	125,722.4

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

[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.

Harvest Four Corners, LLC (Harvest) is submitting this air quality permit application to the New Mexico Air Quality Bureau (NMAQB) for a Significant Permit Revision to its air quality permit for the La Jara Compressor station, construction permit No. 339-M8, issued November 6, 2018, as administratively revised in 339-M8-R1. The facility is also authorized under Title V Operating Permit P023-R3, issued January 10, 2017, as administratively revised in P023-R3-M1. (Title V Operating Permit modification application No. P023-R3-M2 is also currently under review by NMAQB.) The facility is a production gathering field compressor station that pressurizes and dehydrates natural gas for transport through natural gas pipelines.

The current facility permit includes the following emission sources:

- Two Solar Centaur T-4002 natural gas-fired turbines, units 1 and 2;
- One Solar Centaur T-4702 natural gas-fired turbine, unit 3;
- Two Solar Centaur 40-4702S natural gas-fired turbines, units 6 and 7;
- One Waukesha F3512G natural gas-fired standby generator, unit 4;
- One 3-phase separator, unit 18;
- Routine startups, shutdowns and maintenance (SSM) emissions of volatile organic compounds (VOC) from the turbines, compressors and piping associated with the station;
- A pig launcher and receiver, unit P1 and P2;
- Fugitive emissions of VOC from process piping leaks (valves, flanges, seals, etc.), unit F1;
- Three 400-barrel condensate storage tanks, units T1, T2 and T3;
- Condensate liquid truck loading, unit L1; and
- Malfunction emissions of VOC (unit M1).

Unregulated/exempt emission sources at the facility include one produced water storage tank (unit T4) and produced water truck loading (unit L2); one natural gas-fired fuel gas heater (unit 5); and miscellaneous other liquid storage tanks and gas transmission equipment. The regulatory justification for exemption is noted in Table 2-B of the application. Emission calculations for equipment with exemption based on emissions less than 0.5 ton per year are included in section 6.

VOC emissions from the unit 18 separator, condensate storage tanks (T1, T2 and T3) and condensate truck loading (L1) are aggregated under a single combined emission limit for "T1 to T3, L1, 18" within construction permit Table 106.A, and are treated within Table 2-E (Requested Allowable Emissions) as a single emission unit. Similarly, Table 107.A of the permit combines VOC emissions from pig launching (P1) and pig receiving (P2) under a single combined emission limit "P1 and P2", and is treated in the same manner in application Table 2-E. Harvest is not seeking any changes regarding source aggregation for these emission units.

Proposed Permit Revisions

Proposed Replacement of Combustion Turbine Units 1 and/or 2 with Turbine Units 8 and/or 9

In order to improve the performance of the station's compression capabilities, Harvest wishes to have the discretion to replace either or both of its unit 1 and/or unit 2 Solar Centaur T-4002 gas turbine compressor engines with a Solar Centaur 40-4702S upgrade (proposed unit 8 and/or 9, respectively). The replacement of the turbine(s) would take place during a normally scheduled maintenance operation. If implemented, the turbine upgrade(s) result in a ***reduction*** in the Potential To Emit (PTE) for nitrogen oxides (NO_X), carbon monoxide (CO and volatile organic compounds (VOC) emissions from the turbine(s) and a net air quality benefit. The emission estimates in this permit application take into account four turbine replacement scenarios:

- Scenario 0: Continued operation of turbine units 1 and 2 at the facility (i.e., no turbines replaced);
- Scenario 1: Replacement of the unit 1 turbine with unit 8, and no replacement of unit 2;
- Scenario 2: Replacement of the unit 2 turbine with unit 9, and no replacement of unit 1; and
- Scenario 3 Replacement of both turbine units 1 and 2 with turbine units 8 and 9, respectively.

The ambient air quality dispersion modeling study included in this application incorporates a comparison of all of the above turbine scenarios and updates, and demonstrates that all of the proposed potential turbine changes will comply with the ambient air quality standards and PSD increment levels.

If implemented, the above proposed permit changes result in an overall lowering of facility emissions of NO_X, CO and VOC, and negligible emission increases in SO_2 and particulate matter. The negligible emission increases in PTE are based on the use of the updated worst-case fuel heat rate and exhaust

parameters for turbine units 3, 6 and 7 as used in the dispersion modeling for the sake of conservatism. The proposed changes do not result in any de-bottlenecking of operations.

Proposed Removal of Emission Limits for the Unit 4 Exempt Emergency Generator

The Unit 4 Waukesha F3521G generator engine is a standby generator that is only operated during the unavoidable loss of commercial utility power; is operated less than 500 hours per year; and is accompanied by sufficient recordkeeping to verify it is operated less than 500 hours per year. Therefore, the unit is an exempt emission source under 20.2.72.202.B(3) NMAC. However, as identified in Section 13, the engine is subject to the provisions of *National Emission Standards for Hazardous Air Pollutants* (NESHAP), Title 40 of the Code of Regulations, part 63 (40 CFR 63), subpart ZZZZ for *Stationary Reciprocating Internal Combustion Engines*. Therefore, the unit is a regulated emission source and so is included in Table 2-A, "Regulated Emission Sources". Although the unit is a regulated source under subpart ZZZZ, no emission limits apply, only operational and maintenance standards. Therefore, Harvest requests that the emission limits for the unit 4 emergency generator engine be removed from permit Table 106.A, Allowable Emissions.

Fuel Sulfur Limits

The following current fuel sulfur requirement applies to sulfur dioxide (SO_2) emissions from the combustion equipment:

- Permit condition A106 Facility: *Allowable Emissions*, subsection B: ". . . the fuel burned in [turbine] units 3, 6 and 7 shall not contain total sulfur in excess 0.8 percent by weight (8000 ppmw) . . . (40 CFR 60, Subpart GG)".

- Permit condition A110 *Facility: Fuel and Fuel Sulfur Requirements,* subsection A. "Fuel and Fuel Sulfur Requirements (Units 1, 2, 3, 4, 6, and 7)" requires that "All combustion emission units shall combust only natural gas containing no more than **0.2 grains of total sulfur per 100 dry standard cubic feet**."

- Permit condition A205, Turbines, subsection C, 40 CFR 60, Subpart GG (units 3, 6, and 7) provides that the units are subject to 60 CFR 60, Subpart GG [*Standards of Performance for Stationary Gas Turbines*]. Subpart GG, subsection §60.333(b), requires that stationary gas turbines subject to the rule may not burn any fuel which contains total sulfur in excess of 0.8 percent by weight (8000 ppmw).

The calculation of combustion turbine SO_2 Potential To Emit (PTE) is based on use of the AP-42 Table 3.1-2a default emission factor of 3.40E-03 pounds of SO_2 per million British thermal units (lb

SO_2/MMBtu). AP-42 also provides an equation for the calculation of an emission factor (lb/MMBtu) when percentage of fuel sulfur ("S") is known: SO2 lb/MMBtu = 0.94 x S.

Back-calculation of the fuel sulfur % (S) corresponding with the default AP-42 emission factor (lb/MMBtu/0.94 = S) yields S = 3.62E-03 %. As shown in section 6 of this application, using the facility's natural gas density (based on the extended natural gas analysis), the fuel sulfur content that corresponds with the default turbine emission factor is 1.35 gr/100 scf, well above the 0.2 gr/100 scf fuel sulfur content limitation of condition A110. The back-calculated fuel sulfur content is compliant with NSPS subpart GG fuel sulfur requirements. Therefore, Harvest requests that the current 0.2 gr/100 scf fuel sulfur limit be increased to 1.35 gr/100 scf. SO_2 emission calculations based on the default AP-42 emission factor are used in the dispersion modeling of included in this application. The dispersion modeling demonstrates compliance with all applicable ambient air quality standards and PSD increment requirements, including for SO_2.

In comparison to the default emission factor for a natural gas fired turbine, the AP-42 emission factor for SO_2 from a 4-Stroke Rich Burn (4SRB) engine reciprocating internal combustion engine (RICE) is based on a 5.88 E-04 lb SO_2/MMBtu factor (Table 3.2-3), lower than the turbine emission factor. No equation for a known fuel sulfur content is available, however footnote 'e' to Table 3.2-3 indicates that the emission factor is based on an assumed fuel sulfur content of 0.2 gr/100 scf.

As discussed above, the unit 4 emergency generator is an exempt standby generator under 20.2.72.202.B(3) NMAC, but is also subject to operational requirements under 40 CFR 63 subpart ZZZZ and is therefore a regulated emissions unit. Although permitted *emission limits* are not required for unit 4, emission calculations are provided in section 6, including the use of the more-conservative turbine emission factor of 3.40E-03 lb SO_2/MMBtu. The resulting SO_2 emissions are well below 0.5 tpy. The requested 1.35 gr S/100 scf fuel sulfur content applies to all of the facility combustion units, including the unit 4 generator engine.

Condensate Storage Tanks

The current permit contains the following requirements on the aggregated emission source that includes the condensate tanks, 3-phase separator and [condensate] truck loading:

- Permit condition A203, Tanks, subsection A, limits the monthly rolling 12-month total condensate throughput/truck loading to/from the combined units to 6,425 barrels per year (bpy); and the monthly rolling 12-month average 3-phase separator (unit 18) inlet pressure to 91.9 psia.

- Permit condition A106, Facility Allowable Emissions: subsection A, Table 106.A: Allowable Emissions, limits the aggregated emission source unit 'T1 to T3, L1, 18' to 188.0 tpy of VOC.

Harvest is submitting updated emission calculations in this application support of the following requested permit changes:

Revise condition A203 to allow a monthly rolling 12-month total condensate throughput/truck loading to/from the combined units to 6,500 bpy; and the monthly rolling 12-month average 3-phase separator (unit 18) inlet pressure to 205.0 psia.

Revise permit condition A106, Table 106.A: Allowable Emissions, to limit aggregated emission source unit 'T1 to T3, L1, 18' to 48.6 tpy of VOC.

As currently permitted, the facility NO_X and VOC emissions are greater than 250 tpy, making it a major source under the 20.2.74 NMAC '*Permits - Prevention of Significant Deterioration*' (PSD) permitting program. Although major for PSD, the facility is not currently subject to PSD requirements, including BACT, and the proposed modification is a PSD minor modification. If the proposed changes are implemented, the facility emissions will be reduced to below the 250 tpy PSD thresholds and it will become a PSD minor source. The facility will remain a Title V major source subject to the 20.2.70 NMAC [Title V] Operating Permits program.

The emissions of Hazardous Air Pollutants (HAP) from both the current permitted and proposed facility are below 10 tpy per individual HAP and 25 tpy for total HAP. Therefore, the facility remains an area source of HAP.

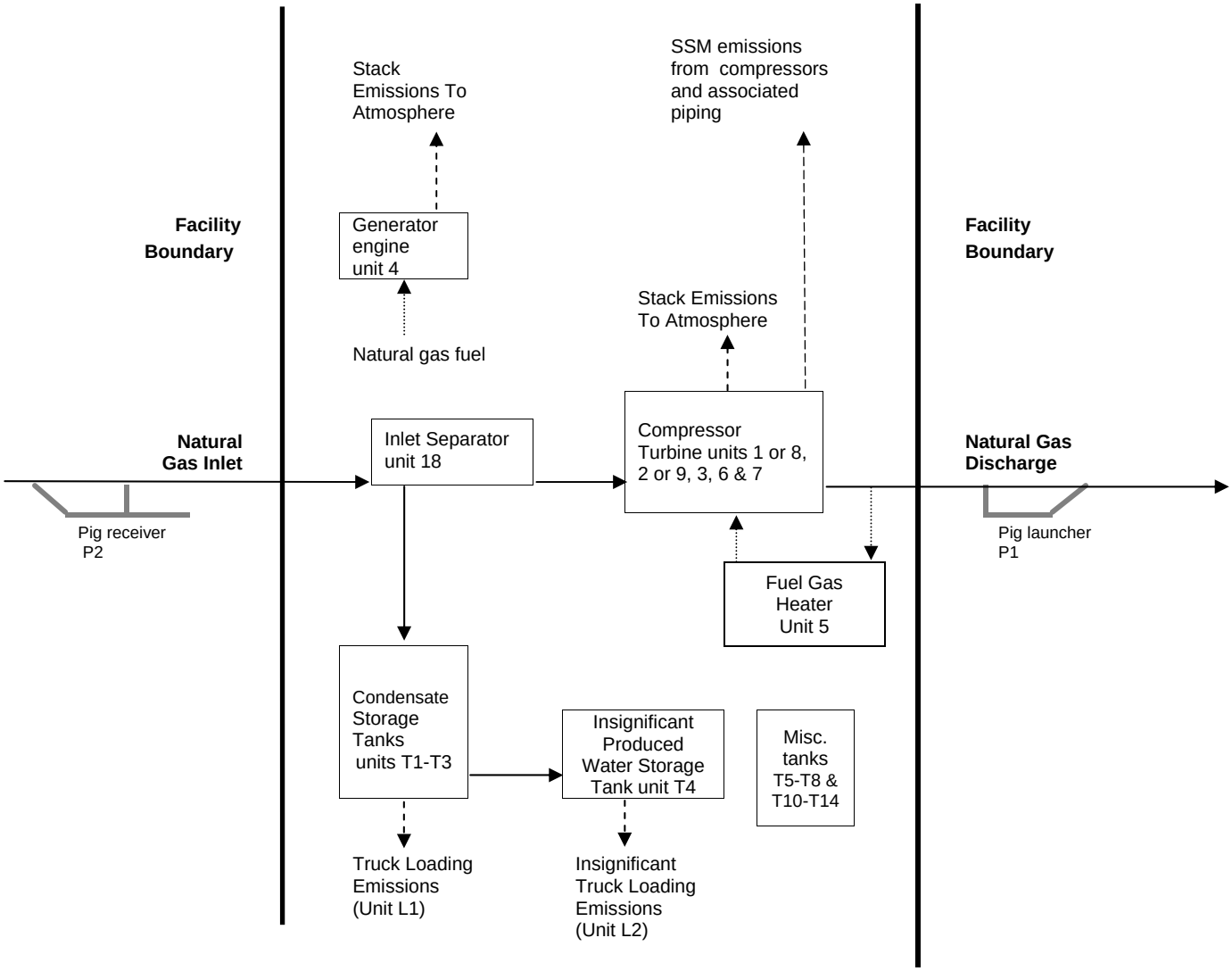
Additional Note

Update of Fuel Flow and Stack Parameters for Combustion Turbine Units 3, 6 and 7. This application contains updated fuel flow rate and exhaust stack parameters for the unit 3 Solar Centaur 40-4702 turbine, and the units 6 and 7 Solar Centaur 40-4702S turbines. The updated parameters are based on manufacturer's data referenced to the worst-case ambient temperature that gives the most conservative fuel flow rates and stack emission dispersion characteristics for dispersion modeling purposes.

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.



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.

Please see the following page(s).

FACILITY LAYOUT

HARVEST FOUR CORNERS, LLC
LA JARA FACILITY
NW¼, NW¼, SECTION 17, T30N, R6W
RIO ARRIBA COUNTY, NEW MEXICO
N36.81754, W107.49144

DRAWN BY:	DATE DRAWN:
C. Lameman	November 7, 2013
REVISIONS BY:	**DATE REVISED:**
T. Goossen	April 20, 2016
CHECKED BY:	**DATE CHECKED:**
M. Hannan	April 20, 2016
APPROVED BY:	**DATE APPROVED:**
M. Hannan	April 20, 2016

NOTE: SITE DIAGRAM OBTAINED FROM HARVEST (PREVIOUSLY: WILLIAMS).

SCALE
75 45 0 75
15
(1 INCH = 75 FEET)

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.

Turbines

The Potential To Emit (PTE) for nitrogen oxides (NO_X), carbon monoxide (CO) and volatile organic compounds (VOC) from the current combustion turbine units 1 and 2 and from their respective upgraded replacements, units 8 and 9, are calculated based the existing Solar T-4002 and the proposed Solar Centaur 40-4702S turbine manufacturer performance data, respectively.

The choice to replace the turbine(s) is to be implemented at Harvest's discretion. If implemented, the proposed unit 8 and/or 9 [replacement] turbines result in significant decreases in the PTE for NO_X, CO and VOC emissions compared to the current unit(s) 1 and/or 2. The PTE data shown in section 2, Table 2-E *Requested Allowable Emissions* reflects the maximum emission rates according to the following turbine scenarios 0, 1, 2 or 3, with the worst-case emissions occurring if the turbine replacements are not implemented (i.e., Scenario 0), equivalent to the current permitted emissions.

- Scenario 0: Continued operation of turbine units 1 and 2 at the facility (i.e., no turbines replaced);
- Scenario 1: Replacement of the unit 1 turbine with unit 8, and no replacement of unit 2;
- Scenario 2: Replacement of the unit 2 turbine with unit 9, and no replacement of unit 1; and
- Scenario 3 Replacement of both turbine units 1 and 2 with turbine units 8 and 9, respectively.

The PTE for NO_X, CO and VOC from combustion turbine unit 3 is based on manufacturer performance data for the Solar Centaur 40-4702 turbine. The PTE for NO_X, CO and VOC for units 6 and 7 are based on manufacturer performance data for the Solar Centaur 40-4702S turbine. The turbine heat rate and exhaust flow parameters used in all of the turbine calculations and dispersion modeling corresponds with the manufacturer's published fuel rate and exhaust parameters at 32 ° F ambient temperature, which corresponds with the most conservative pollutant dispersion modeling results.

Sulfur dioxide (SO_2) and particulate emissions are calculated for the turbines using the default AP-42 emission factor from Table 3.1-2a in pounds of pollutant per million British thermal units (lb/MMBtu), multiplied by the maximum hourly turbine fuel heat rate (MMBtu/hr). Hazardous air pollutant (HAP) emissions are calculated using GRI-HAPCalc 3.0 emissions estimation software. All emission calculations assume operation at full site capacity for 8,760 hours per year.

The turbines start up with no load and a rich fuel mixture. As a result, the emissions during startups are minimized. Because the turbines take only minutes to reach operating temperature, emissions during startup are not expected to exceed the steady-state allowable limits. Similarly, emissions during

shutdown do not exceed the steady-state allowable limits, because fuel and air flow cease within seconds of shutdown. Emissions due to scheduled maintenance are negligible as the turbines are not in operation during maintenance.

Backup Emergency Generator Reciprocating Engine (Exempt)

Emissions of nitrogen oxides (NO_X), carbon monoxide (CO) and volatile organic compound (VOC) emissions from the 4-stroke, rich burn (4SRB) natural gas fired Waukesha F3521G, unit 4, are calculated from engine manufacturer's data and the site-rated horsepower (hp) rating of the engine. As discussed in section 3, emissions of sulfur dioxide (SO_2) are calculated from a default turbine AP-42 emission factor from Table 3.1-2a in lb/MMBtu, multiplied by the maximum hourly turbine fuel heat rate (MMBtu/hr). Particulate emissions are calculated from the appropriate AP-42, Table 3.2-2 emission factors for 4SRB engines, multiplied by the maximum hourly engine fuel heat rate (MMBtu/hr). Uncontrolled hazardous air pollutants (HAPs) from the RICE are calculated with the GRI-HAPCalc 3.01 emissions estimation software. The emission calculations assume operation at full site capacity for 500 hours per year. The generator and its associated engine are limited to less than 500 hours of operation per year as it operates only during the loss of commercial utility power. The unit is a regulated source under the Operating Permit.

The engine starts up with no load and a rich fuel mixture. As a result, emissions are minimized. Because the engine takes only minutes to reach the operating temperature of the engine, emissions during startup are not expected to exceed the steady-state allowable emission rate limits. There are no Environmental Protection Agency (EPA)-approved test methods available to measure emissions during startup.

Similarly, emissions during shut down do not exceed the steady-state allowable limits because the fuel and air flow to the engine cease within seconds of shutdown. Emissions due to scheduled maintenance are negligible, as the engine is not in operation during maintenance.

As identified in section 3 of this application, Harvest requests that the exempt unit 4 emergency generator engine emissions be removed from the permit.

Fuel Gas Heater (Exempt)

NO_X, CO, VOC, SO_2 and particulate emissions from the fuel gas heater (unit 5) are calculated using AP-42 emission factors and the maximum fuel use. Hazardous air pollutant (HAP) emissions are calculated using GRI-HAPCalc 3.0 emissions es. All emission calculations assume operation at full site capacity for 8,760 hours per year. The emission calculations are provided in this section. Based on a PTE of less than 0.5 tpy for any regulated air pollutant, the heater is an exempt emission source under 20.2.72.202.B(5) NMAC.

Startup, Shutdown & Routine Maintenance (SSM) Emissions of VOC from Turbines, Compressors, and Piping

During routine and predictable startup, shutdown and/or maintenance activities (SSM) of the turbines, compressors and piping blowdowns, emissions of VOC are released to the atmosphere. SSM emissions from the turbines result from the blowdown of motive gas used to drive turbine components during startups and shutdowns. SSM emissions from the compressors occur when high pressure gas is used to purge air from the compressors and associated piping prior to startups. Also, after a shutdown, high pressure gas in the compressor and associated piping is released to atmosphere as a safety precaution.

One common reason for compressor startups and shutdowns is a change in the amount of compression required from the station due to fluctuations in the pipeline. To prolong the life of equipment and reduce engine emissions, the compressors are shutdown when not needed. It is "routine or predictable" that the compressors at the station will come on-line and drop off-line many times during the course of operation. It is also standard industry practice.

A compressor is also shut down for maintenance of the turbine engine, the compressor, or other equipment at the station. The maintenance is scheduled based the unit time in service and/or monitoring of equipment (visual and automated), in accordance with company and standard industry practice. This maintenance is also "routine or predictable".

SSM venting emissions of VOC and HAP from facility turbines, compressors and piping blowdowns are calculated from the composition of the natural gas, the quantity of gas vented during each event, and the estimated number of annual events. The composition of the natural gas is based on an extended gas analysis of the facility inlet gas line sampled on May 25, 2018. The quantity of gas vented during each event is determined by Harvest engineering. The annual number of blowdown events for the compressors are estimated based on historical data. A safety factor is added because VOC and HAP emissions from each blowdown event are dependent on the composition of the gas in the pipeline, and because the annual number of blowdowns may vary. Experience indicates the composition of the gas is also likely to vary. The use of the safety factor is designed to ensure an adequate emissions limit, which includes emissions from other non-blowdown miscellaneous startup, shutdown and maintenance activities.

The SSM emissions identified in this application are routine or predictable startup, shutdown and/or scheduled maintenance, and do not include malfunctions or upsets. Emission calculations are provided in this section.

Pig Launcher and Receiver

The facility includes a pipeline pig launcher (unit P1) and pig receiver (unit P2) for the removal of hydrocarbons and water from the natural gas pipeline ("pigging" operations). A "pig" is a device that is periodically inserted into a pipeline for the purpose of cleaning and/or internal inspection. The pig is

inserted into the pipeline at an upstream location, and through the pressure of the natural gas behind it is propelled downstream, pushing along with it residual material through the pipeline. The pig is then "caught" into a receptacle (pig receiver) at a downstream compressor station facility. Gas, hydrocarbon liquids and pressurized water "slugs" are pushed into the catcher (or into the inlet scrubber) where the gas is separated from the liquids and routed into the gathering pipeline. The depressurized hydrocarbon liquid and/or water mixture is drained and diverted to a storage tank for separation and storage.

A small amount of natural gas is released when the pig receiver is opened to insert or retrieve the pig, including VOC and HAP constituents in the natural gas. The pig launcher and receiver /slug catcher VOC emissions are fugitive emissions that result from opening valves at the pig receiving compartment along the line.

Emissions of VOC and HAP are calculated from the composition of the natural gas, and the aggregated sum volumes of gas released per year during pigging operations. The composition of the natural gas is based on the inlet extended gas analysis identified above. The annual quantity of gas released is determined by Harvest engineering based on historical data with safety factor is incorporated.

Harvest does not seek any changes to the current aggregated permitted pigging (unit P1 and P2) emissions. The requested allowable emissions in Table 2-E and 2-F are carried forward from the existing permit.

Fugitive Emissions

Fugitive emissions of VOC and HAP from equipment leaks (unit F1) are calculated using emission factors from Table 2.4 of the 1995 Protocol for Equipment Leak Emission Estimates published by the Environmental Protection Agency (EPA), equipment counts from Harvest, and the gas stream composition obtained from the extended gas analysis. The HAP components of the natural gas are derived from the species molar percentages in the natural gas. Due to the nature of the source, it is estimated that SSM emissions from valves, connectors, seals, etc. are accounted for in the calculations. Emission calculations are provided in this section.

Condensate Storage Tanks

Flash emissions

The ProMax 3.2 emissions modeling program is used to calculate the facility-wide emissions of flashed VOC and HAP associated with the aggregated source that includes the inlet separator (unit 18), three 400-barrel condensate liquid storage tanks (units T1, T2 and T3) and condensate truck loading (unit L1), collectively permitted as unit "T1 to T3, L1, 18". The ProMax flash emissions model provides the facility-wide aggregated flash emissions of VOC in the "La Jara Condensate Tank Flash Model" main flowsheet, which also provides a graphical representation of the individual material streams. Input data to

the model includes a representative condensate liquid analysis (La Jara Liquid Spot analysis, sampled on July 19, 2019) along with operating parameters representative of the La Jara Compressor Station facility.

The total flashed gas lb/hr including (VOC and non-VOC) mass flow is provided in the '/Tank_Flash_Emissions (Material Stream)' (9.62 lb/hr). The VOC mass flow (lb/hr) is calculated by taking the sum of the vapor stream (Vap) non-methane, non-ethane (NMNE) speciated hydrocarbon mass fractions under multiplied by the total gas mass flow (lb/hr). Tons per year VOC tpy = VOC lb/hr x 8760 hr/yr x 1 ton/2000 lbs.

Similarly, the facility-wide flashed gas HAP emissions are calculated from the individual speciated vapor mass flow fractions in the '/Tank_Flash_Emissions (Material Stream)' and the total gas mass flow (lb/hr). Tons per year are calculated from HAP lb/hr x 8760 hr/yr x 1 ton/2000 lbs.

Tank Working & Breathing Emissions

Condensate storage tank working and breathing losses of VOC and HAP are calculated using TANKS 4.0.9d emission estimation software and an assumed annual facility throughput of 6,500 barrels per year (bpy) (273,000 gallons per year, gpy) of condensate divided equally among the three condensate storage tanks (91,000 gpy each). The condensate liquid composition (including HAP constituents) is estimated from the the ProMax emissions model '/Condensate_Truck_Loading (Material Stream)' 'Fraction [Fraction]' (speciated mole fractions) data for the liquid stream. The mole fractions are added to the "TANKS 4.09d Condensate Liquid Input" spreadsheet where they are "normalized" to balance the liquid composition of the light molecular weight gases that are flashed during depressurization upon entry of the liquid to the storage tank. The normalizing removes the weight percentages of the flashed gases, and reassigns them to the weight percentage of the lightest hydrocarbon that exists at in a liquid state at atmospheric pressure (i.e., the butanes), resulting in a more conservative estimate of tank working and breathing losses.

An overall 25% safety factor is applied the calculated flashing, working and breathing losses and truck loading tpy emissions prior to their aggregation in unit 'T1 to T3, L1, 18' of the Table 2-E (Requested Allowable Emissions) in order to allow for fluctuation in the composition of the condensate liquid. The calculated PTE (less than 61 tpy VOC) is significantly lower than the currently permitted 188.0 tpy VOC for the 'T1 to T3, L1, 18' aggregated emission unit.

Exempt Storage Tanks

Except for the condensate storage tanks, all of the storage tanks at the La Jara Compressor Station are either exempt under 20.2.72.202.B(2) or 20.2.72.202.B(5) NMAC, or are not a source of VOC/HAP. Emission calculations are provided for exemption based on emissions of 0.5 tpy or less of any regulated air pollutant (20.2.72.202.B(5) NMAC).

- VOC and HAP emissions for the produced water storage tank (unit T4) are calculated by selecting the most conservative emission factors from the Colorado Department of Public Health and Environment (CDPHE) February 8, 2010 PS Memo 09-02 "Oil and Gas Produced Water Tank Batteries Regulatory Definitions and Guidance" and the Texas Commission on Environmental Quality (TCEQ) August 2010 project "Emission Factor Determination for Produced Water Storage Tanks", and the maximum annual facility-wide produced water throughput. Based on a PTE of less than 1 tpy for any regulated air pollutant, the unit T4 produced water storage tank is an exempt source under 20.2.72.202.B(5) NMAC.

- Residual oil #6 is used to represent lubrication oil and used oil. Based on a vapor pressure of residual oil #6 of less than less than 0.2 PSI, the lube oil storage tanks (units T5, T6, and T7) and used oil tank (unit T8) are exempt under 20.2.72.202.B(2) NMAC.

- Emissions for the methanol storage tank (unit T10) are calculated using TANKS 4.09d emission calculation software. The calculated PTE is 661.7 pounds per year of VOC (methanol) is below 0.5 tpy. Based on a PTE of less than 0.5 tpy for any regulated air pollutant, the unit T10 methanol storage tank is an exempt source under 20.2.72.202.B(5) NMAC.

- Emissions for the corrosion inhibitor storage tank (unit T11) are calculated using TANKS 4.09d emission calculation software. The calculated PTE is 38.77 pounds per year of VOC, well below 0.5 tpy. Based on a PTE of less than 0.5 tpy for any regulated air pollutant, the unit T11 corrosion inhibitor storage tank is an exempt source under 20.2.72.202.B(5) NMAC.

- Based on a vapor pressure of diesel fuel stored in the unit T12 diesel storage tank of less than less than 0.2 PSI, the unit T12 diesel tank is exempt under 20.2.72.202.B(2) NMAC.

- The MSDS for the BACTRON K-87 biocide in storage tank T13 shows it does not contain VOC or HAP. Therefore, it is not a regulated emission source.

- The MSDS for the Chevron ATF DEXTRON III/MERCON automatic transmission fluid in storage tank T14 shows it does not contain VOC or HAP. Therefore, it is not a regulated emission source.

Due to the nature of operations, startup and shutdown emissions from the storage tanks are assumed to be accounted for in the TANKS 4.0.9d program used to calculate emissions. Emissions due to maintenance are negligible.

Condensate Truck Loading Emissions

VOC and HAP emissions from condensate truck loading activites (unit L1) are calculated using emission factors from AP-42 Section 5.2, *Truck Loading*, and the estimated maximum throughput of condensate loaded annually. The emission calculations assume submerged loading during transfer operations. The

composition of the liquid (including HAP) is based on the vapor mass fractions of VOC in the TANKS 4.09d output.

The requested allowable emissions from the condensate truck loading emissions are included in Table 2-E under the aggregated emission source unit ‘T1 to T3, L1, 18’.

Produced Water Truck Loading Emissions (Exempt)

Emissions of VOC and HAP from produced water truck loading activities (unit L2) are estimated using emission factors from AP-42 Section 5.2, *Truck Loading* and the estimated maximum annual facility throughput of produced water. The emission calculations assume submerged loading during transfer operations. The HAPs are calculated from the weight ratios of the CDPHE/TCEQ produced water emission factors of HAP to VOC (lb/bbl HAP / lb/bbl VOC), and applied to the truck loading pph and tpy VOC emission rates. Based on a PTE of less than 0.5 tpy for any regulated air pollutant, the produced water truck loading emissions is an exempt source under 20.2.72.202.B(5) NMAC.

Malfunctions

Malfunction (unit M1) emissions are set at 10 tons of VOC per year. Based on the gas release rate associated with the set emission rate, HAP emissions are estimated using the natural gas extended analysis described above. The HAP calculations are provided in this section.

Turbine Exhaust Emissions Data and Calculations

Unit Number: 1 & 2
Description: Solar Centaur T-4002

Note: Where more than one emissions unit is identified above, this worksheet provides the emission rates and operating parameters for each individual emissions unit.

Horsepower Calculations

6,325	ft above MSL	Elevation	
3,961	hp	Nameplate hp	Mfg. data
3,123	hp	Site-rated hp	NMAQB Procedure # 02.002-00
3,025	hp	Site-rated hp	Mfg. data

Fuel Consumption

9,445	Btu/hp-hr	Brake specific fuel consumption	Mfg. data
29.50	MMBtu/hr	Hourly fuel consumption	Btu/hp-hr x NMAQB site-rated hp / 1,000,000
32,775.16	scf/hr	Hourly fuel consumption	MMBtu/hr x 1,000,000 / Btu/scf
258,399.35	MMBtu/yr	Annual fuel consumption	MMBtu/hr x 8,760 hr/yr
287.11	MMscf/yr	Annual fuel consumption	scf/hr x 8,760 hr/yr / 1,000,000
900	Btu/scf	Field gas heating value	Nominal heat content

Steady-State Emission Rates

Pollutant	Uncontrolled, pph	Uncontrolled, tpy
NOX	15.07	66.00
CO	14.41	63.10
VOC	4.41	19.30

Emission rates taken from the Solar Data Sheet (with safety factors)

Pollutant	Uncontrolled, lb/MMBtu	pph	tpy
SO2	3.40E-03	0.100	0.439
TSP	6.60E-03	0.195	0.853
PM10	6.60E-03	0.195	0.853
PM2.5	6.60E-03	0.195	0.853

Emission factors (lb/MMBtu) taken from AP-42, Table 3.1-2a
Uncontrolled Emission Rates (pph) = lb/MMBtu x MMBtu/hr
Uncontrolled Emission Rates (tpy) = Uncontrolled Emission Rates (pph) x hr/yr / 2,000 lb/ton

Pollutant	Uncontrolled, lb/MMscf	pph	tpy
Lead	5.00E-04	1.64E-05	7.18E-05

Emission factor (lb/MMscf) taken from AP-42, Table 1.4-2

Annual emissions based on 8,760 hr/yr operation

Exhaust Parameters

788.20	°F	Exhaust temperature	Mfg. data
72,242.16	cfm	Stack flowrate	Calculated from 1,797.8 lbm/min
2.50	ft	Stack diameter	Harvest
245.28	fps	Stack velocity	Stack flowrate / stack area / 60
21.00	ft	Stack height	Harvest

GRI-HAPCalc ® 3.01
Turbine Report

Facility ID:	**LA JARA C.S.**	**Notes:**	**Existing Turbine Units 1 & 2 Solar Centaur T-4002**
Operation Type:	**COMPRESSOR STATION**		
Facility Name:	**LA JARA COMPRESSOR STATION**		
User Name:	**Cirrus Consulting, LLC**		
Units of Measure:	**U.S. STANDARD**		

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

Turbine Unit

Unit Name: 1 & 2

Hours of Operation: 8,760 Yearly

Rate Power: 3123 hp

Fuel Type: NATURAL GAS

Emission Factor Set: FIELD > EPA > LITERATURE

Additional EF Set: -NONE-

Calculated Emissions (ton/yr)

Chemical Name	Emissions	Emission Factor	Emission Factor Set
HAPs			
PAHs	0.0003	0.00000970 g/bhp-hr	EPA
Formaldehyde	0.5103	0.01693680 g/bhp-hr	GRI Field
Acetaldehyde	0.5223	0.01733570 g/bhp-hr	GRI Field
1,3-Butadiene	0.0019	0.00006160 g/bhp-hr	GRI Field
Acrolein	0.0078	0.00026000 g/bhp-hr	GRI Field
Propional	0.0261	0.00086500 g/bhp-hr	GRI Field
Propylene Oxide	0.0038	0.00012730 g/bhp-hr	EPA
Benzene	0.0162	0.00053840 g/bhp-hr	GRI Field
Toluene	0.0124	0.00041100 g/bhp-hr	GRI Field
Ethylbenzene	0.0042	0.00014050 g/bhp-hr	EPA
Xylenes(m,p,o)	0.0375	0.00124410 g/bhp-hr	GRI Field
2,2,4-Trimethylpentane	0.0484	0.00160530 g/bhp-hr	GRI Field
n-Hexane	0.0454	0.00150580 g/bhp-hr	GRI Field
Phenol	0.0033	0.00011010 g/bhp-hr	GRI Field
Naphthalene	0.0002	0.00000760 g/bhp-hr	GRI Field
2-Methylnaphthalene	0.0000	0.00000130 g/bhp-hr	GRI Field
Biphenyl	0.0100	0.00033050 g/bhp-hr	GRI Field
Phenanthrene	0.0000	0.00000050 g/bhp-hr	GRI Field
Chrysene	0.0000	0.00000100 g/bhp-hr	GRI Field
Beryllium	0.0000	0.00000010 g/bhp-hr	GRI Field
Phosphorus	0.0020	0.00006520 g/bhp-hr	GRI Field
Chromium	0.0002	0.00000820 g/bhp-hr	GRI Field
Manganese	0.0005	0.00001750 g/bhp-hr	GRI Field
Nickel	0.0002	0.00000610 g/bhp-hr	GRI Field
Cobalt	0.0000	0.00000160 g/bhp-hr	GRI Field
Arsenic	0.0000	0.00000060 g/bhp-hr	GRI Field
Selenium	0.0000	0.00000030 g/bhp-hr	GRI Field

Cadmium	0.0000	0.00000020	g/bhp-hr	GRI Field
Mercury	0.0001	0.00000270	g/bhp-hr	GRI Field
Lead	0.0001	0.00000340	g/bhp-hr	GRI Field
Total	1.2532			

Criteria Pollutants

PM	0.8729	0.02897200	g/bhp-hr	EPA
CO	63.5213	2.10828420	g/bhp-hr	GRI Field
NMHC	5.8414	0.19387800	g/bhp-hr	GRI Field
NMEHC	0.2777	0.00921840	g/bhp-hr	EPA
NOx	37.7269	1.25216290	g/bhp-hr	GRI Field
SO2	0.0309	0.00102720	g/bhp-hr	GRI Field

Other Pollutants

Methane	29.7435	0.98719230	g/bhp-hr	GRI Field
Acetylene	0.2159	0.00716540	g/bhp-hr	GRI Field
Ethylene	0.4204	0.01395450	g/bhp-hr	GRI Field
Ethane	4.5219	0.15008370	g/bhp-hr	GRI Field
Propane	0.4821	0.01600000	g/bhp-hr	GRI Field
Isobutane	0.1446	0.00480000	g/bhp-hr	GRI Field
Butane	0.1567	0.00520000	g/bhp-hr	GRI Field
Cyclopentane	0.0497	0.00165110	g/bhp-hr	GRI Field
Butyrald/Isobutyraldehyde	0.0404	0.00134000	g/bhp-hr	GRI Field
n-Pentane	2.4450	0.08115000	g/bhp-hr	GRI Field
Cyclohexane	0.1845	0.00612400	g/bhp-hr	GRI Field
Methylcyclohexane	0.2661	0.00883120	g/bhp-hr	GRI Field
n-Octane	0.0961	0.00318890	g/bhp-hr	GRI Field
1,3,5-Trimethylbenzene	0.0904	0.00300000	g/bhp-hr	GRI Field
n-Nonane	0.0160	0.00053260	g/bhp-hr	GRI Field
CO2	14,548.4571	482.86607780	g/bhp-hr	EPA
Vanadium	0.0000	0.00000070	g/bhp-hr	GRI Field
Copper	0.0006	0.00002050	g/bhp-hr	GRI Field
Molybdenum	0.0006	0.00002030	g/bhp-hr	GRI Field
Barium	0.0007	0.00002290	g/bhp-hr	GRI Field

Turbine Exhaust Emissions Calculations

Unit Number: 3 (Updated)
Description: Solar Centaur 40-4702

Note: The data on this worksheet applies to each individual emissions unit identified above.

Horsepower Calculations

6,325	ft above MSL	Elevation	
4,680	hp	Nameplate hp	Mfg. data
3,690	hp	NMAQB Site-rated hp	NMAQB Procedure # 02.002-00 (Nameplate hp x [29.9 - (ft above MSL / 1000)] / 29.9)
3,779	hp	Mfg. Site-rated hp	Mfg. data (Nominal @ 20 °F)

Fuel Consumption

9,510	Btu/hp-hr	Brake specific fuel consumption	Mfg. data (Nominal @ 20 °F)
35.94	MMBtu/hr	Hourly fuel consumption	Btu/hp-hr x Mfg. site-rated hp / 1,000,000
900	Btu/scf	Field gas heating value	Nominal heat content
39,931	scf/hr	Hourly fuel consumption	MMBtu/hr x 1,000,000 / Btu/scf
8,760	hr/yr	Annual operating time	Williams Four Corners LLC
314,819	MMBtu/yr	Annual fuel consumption	MMBtu/hr x hr/yr
349.80	MMscf/yr	Annual fuel consumption	scf/hr x hr/yr / 1,000,000

Steady-State Emission Rates

Pollutants	Uncontrolled Emission Rates, pph	tpy
NO_X	24.06	105.39
CO	4.39	19.21
VOC	2.51	11.00

Emission rates (tpy) taken from the Solar Data Sheet
Uncontrolled Emission Rates (pph) = Uncontrolled Emission Rates (tpy) x 2,000 lb/ton / hr/yr

Pollutants	Emission Factors, lb/MMBtu	Uncontrolled Emission Rates, pph	tpy
SO_2	3.40E-03	0.122	0.535
PM/TSP	6.60E-03	0.237	1.039
PM_{10}	6.60E-03	0.237	1.039
$PM_{2.5}$	6.60E-03	0.237	1.039

Emission factors (lb/MMBtu) taken from AP-42, Table 3.1-2a
Uncontrolled Emission Rates (pph) = lb/MMBtu x MMBtu/hr
Uncontrolled Emission Rates (tpy) = Uncontrolled Emission Rates (pph) x hr/yr / 2,000 lb/ton

Exhaust Parameters

797	°F	Exhaust temperature	Mfg. data (Nominal @ 20 °F)
72,842	cfm	Stack flowrate	Mfg. data (Nominal @ 100 °F)
6.50	ft	Stack exit diameter	Williams Four Corners LLC
33.18	ft^2	Stack exit area	3.1416 x ((ft / 2) ^2)
36.59	fps	Stack exit velocity	acfm / ft^2 / 60 sec/min
32.00	ft	Stack height	Williams Four Corners LLC

GRI-HAPCalc ® 3.01
Turbine Report

Facility ID:	**LA JARA C.S.**	**Notes:**	**Turbine Unit 3 Solar Centaur 40-4702 (Updated)**
Operation Type:	**COMPRESSOR STATION**		
Facility Name:	**LA JARA COMPRESSOR STATION**		
User Name:	**Cirrus Consulting, LLC**		
Units of Measure:	**U.S. STANDARD**		

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

Turbine Unit

Unit Name: 3

Hours of Operation: 8,760 Yearly

Rate Power: 3779 hp

Fuel Type: NATURAL GAS

Emission Factor Set: FIELD > EPA > LITERATURE

Additional EF Set: -NONE-

Calculated Emissions (ton/yr)

Chemical Name	Emissions	Emission Factor	Emission Factor Set
HAPs			
PAHs	0.0004	0.00000970 g/bhp-hr	EPA
Formaldehyde	0.6175	0.01693680 g/bhp-hr	GRI Field
Acetaldehyde	0.6320	0.01733570 g/bhp-hr	GRI Field
1,3-Butadiene	0.0022	0.00006160 g/bhp-hr	GRI Field
Acrolein	0.0095	0.00026000 g/bhp-hr	GRI Field
Propional	0.0315	0.00086500 g/bhp-hr	GRI Field
Propylene Oxide	0.0046	0.00012730 g/bhp-hr	EPA
Benzene	0.0196	0.00053840 g/bhp-hr	GRI Field
Toluene	0.0150	0.00041100 g/bhp-hr	GRI Field
Ethylbenzene	0.0051	0.00014050 g/bhp-hr	EPA
Xylenes(m,p,o)	0.0454	0.00124410 g/bhp-hr	GRI Field
2,2,4-Trimethylpentane	0.0585	0.00160530 g/bhp-hr	GRI Field
n-Hexane	0.0549	0.00150580 g/bhp-hr	GRI Field
Phenol	0.0040	0.00011010 g/bhp-hr	GRI Field
Naphthalene	0.0003	0.00000760 g/bhp-hr	GRI Field
2-Methylnaphthalene	0.0000	0.00000130 g/bhp-hr	GRI Field
Biphenyl	0.0120	0.00033050 g/bhp-hr	GRI Field
Phenanthrene	0.0000	0.00000050 g/bhp-hr	GRI Field
Chrysene	0.0000	0.00000100 g/bhp-hr	GRI Field
Beryllium	0.0000	0.00000010 g/bhp-hr	GRI Field
Phosphorus	0.0024	0.00006520 g/bhp-hr	GRI Field
Chromium	0.0003	0.00000820 g/bhp-hr	GRI Field
Manganese	0.0006	0.00001750 g/bhp-hr	GRI Field
Nickel	0.0002	0.00000610 g/bhp-hr	GRI Field
Cobalt	0.0001	0.00000160 g/bhp-hr	GRI Field
Arsenic	0.0000	0.00000060 g/bhp-hr	GRI Field
Selenium	0.0000	0.00000030 g/bhp-hr	GRI Field

Cadmium	0.0000	0.00000020	g/bhp-hr	GRI Field
Mercury	0.0001	0.00000270	g/bhp-hr	GRI Field
Lead	0.0001	0.00000340	g/bhp-hr	GRI Field
Total	1.5163			

Criteria Pollutants

PM	1.0563	0.02897200	g/bhp-hr	EPA
CO	76.8642	2.10828420	g/bhp-hr	GRI Field
NMHC	7.0684	0.19387800	g/bhp-hr	GRI Field
NMEHC	0.3361	0.00921840	g/bhp-hr	EPA
NOx	45.6516	1.25216290	g/bhp-hr	GRI Field
SO2	0.0374	0.00102720	g/bhp-hr	GRI Field

Other Pollutants

Methane	35.9912	0.98719230	g/bhp-hr	GRI Field
Acetylene	0.2612	0.00716540	g/bhp-hr	GRI Field
Ethylene	0.5088	0.01395450	g/bhp-hr	GRI Field
Ethane	5.4718	0.15008370	g/bhp-hr	GRI Field
Propane	0.5833	0.01600000	g/bhp-hr	GRI Field
Isobutane	0.1750	0.00480000	g/bhp-hr	GRI Field
Butane	0.1896	0.00520000	g/bhp-hr	GRI Field
Cyclopentane	0.0602	0.00165110	g/bhp-hr	GRI Field
Butyrald/Isobutyraldehyde	0.0489	0.00134000	g/bhp-hr	GRI Field
n-Pentane	2.9586	0.08115000	g/bhp-hr	GRI Field
Cyclohexane	0.2233	0.00612400	g/bhp-hr	GRI Field
Methylcyclohexane	0.3220	0.00883120	g/bhp-hr	GRI Field
n-Octane	0.1163	0.00318890	g/bhp-hr	GRI Field
1,3,5-Trimethylbenzene	0.1094	0.00300000	g/bhp-hr	GRI Field
n-Nonane	0.0194	0.00053260	g/bhp-hr	GRI Field
CO2	17,604.4251	482.86607780	g/bhp-hr	EPA
Vanadium	0.0000	0.00000070	g/bhp-hr	GRI Field
Copper	0.0007	0.00002050	g/bhp-hr	GRI Field
Molybdenum	0.0007	0.00002030	g/bhp-hr	GRI Field
Barium	0.0008	0.00002290	g/bhp-hr	GRI Field

Turbine Exhaust Emissions Calculations

Unit Number: 6 & 7 (Updateds)
Description: Solar Centaur 40-4702S

Note: The data on this worksheet applies to each individual emissions unit identified above.

Horsepower Calculations

6,325	ft above MSL	Elevation	
4,680	hp	Nameplate hp	Mfg. data
3,690	hp	NMAQB Site-rated hp	NMAQB Procedure # 02.002-00 (Nameplate hp x [29.9 - (ft above MSL / 1000)] / 29.9)
3,934	hp	Mfg. Site-rated hp	Mfg. data (Nominal @ 0 °F)

Fuel Consumption

9,230	Btu/hp-hr	Brake specific fuel consumption	Mfg. data (Nominal @ 0 °F)
36.31	MMBtu/hr	Hourly fuel consumption	Btu/hp-hr x Mfg. site-rated hp / 1,000,000
900	Btu/scf	Field gas heating value	Nominal heat content
40,345	scf/hr	Hourly fuel consumption	MMBtu/hr x 1,000,000 / Btu/scf
8,760	hr/yr	Annual operating time	Williams Four Corners LLC
318,083	MMBtu/yr	Annual fuel consumption	MMBtu/hr x hr/yr
353.43	MMscf/yr	Annual fuel consumption	scf/hr x hr/yr / 1,000,000

Steady-State Emission Rates

Pollutants	Uncontrolled Emission Rates, pph	tpy
NO_X	3.637	15.93
CO	4.429	19.40
VOC	1.268	5.56

Emission rates (tpy) taken from the Solar Data Sheet
Uncontrolled Emission Rates (pph) = Uncontrolled Emission Rates (tpy) x 2,000 lb/ton / hr/yr

Pollutants	Emission Factors, lb/MMBtu	Uncontrolled Emission Rates, pph	tpy
SO_2	3.40E-03	0.123	0.541
PM/TSP	6.60E-03	0.240	1.050
PM_{10}	6.60E-03	0.240	1.050
$PM_{2.5}$	6.60E-03	0.240	1.050

Emission factors (lb/MMBtu) taken from AP-42, Table 3.1-2a
Uncontrolled Emission Rates (pph) = lb/MMBtu x MMBtu/hr
Uncontrolled Emission Rates (tpy) = Uncontrolled Emission Rates (pph) x hr/yr / 2,000 lb/ton

Exhaust Parameters

789	°F	Exhaust temperature	Mfg. data (Nominal @ 0 °F)
76,090	cfm	Stack flowrate	Mfg. data (Nominal @ 85 °F)
2.50	ft	Stack exit diameter	Williams Four Corners LLC
4.91	ft^2	Stack exit area	3.1416 x ((ft / 2) ^2)
258.35	fps	Stack exit velocity	acfm / ft^2 / 60 sec/min
39.00	ft	Stack height	Williams Four Corners LLC

GRI-HAPCalc ® 3.01
Turbine Report

Facility ID:	**LA JARA C.S.**	**Notes:**	**Turbine Units 6 and 7 Solar Centaur 40-4702S (Updated)**
Operation Type:	**COMPRESSOR STATION**		
Facility Name:	**LA JARA COMPRESSOR STATION**		
User Name:	**Cirrus Consulting, LLC**		
Units of Measure:	**U.S. STANDARD**		

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

Turbine Unit

Unit Name: 6 & 7

Hours of Operation: 8,760 Yearly

Rate Power: 3934 hp

Fuel Type: NATURAL GAS

Emission Factor Set: FIELD > EPA > LITERATURE

Additional EF Set: -NONE-

Calculated Emissions (ton/yr)

Chemical Name	Emissions	Emission Factor	Emission Factor Set
HAPs			
PAHs	0.0004	0.00000970 g/bhp-hr	EPA
Formaldehyde	0.6428	0.01693680 g/bhp-hr	GRI Field
Acetaldehyde	0.6580	0.01733570 g/bhp-hr	GRI Field
1,3-Butadiene	0.0023	0.00006160 g/bhp-hr	GRI Field
Acrolein	0.0099	0.00026000 g/bhp-hr	GRI Field
Propional	0.0328	0.00086500 g/bhp-hr	GRI Field
Propylene Oxide	0.0048	0.00012730 g/bhp-hr	EPA
Benzene	0.0204	0.00053840 g/bhp-hr	GRI Field
Toluene	0.0156	0.00041100 g/bhp-hr	GRI Field
Ethylbenzene	0.0053	0.00014050 g/bhp-hr	EPA
Xylenes(m,p,o)	0.0472	0.00124410 g/bhp-hr	GRI Field
2,2,4-Trimethylpentane	0.0609	0.00160530 g/bhp-hr	GRI Field
n-Hexane	0.0572	0.00150580 g/bhp-hr	GRI Field
Phenol	0.0042	0.00011010 g/bhp-hr	GRI Field
Naphthalene	0.0003	0.00000760 g/bhp-hr	GRI Field
2-Methylnaphthalene	0.0000	0.00000130 g/bhp-hr	GRI Field
Biphenyl	0.0125	0.00033050 g/bhp-hr	GRI Field
Phenanthrene	0.0000	0.00000050 g/bhp-hr	GRI Field
Chrysene	0.0000	0.00000100 g/bhp-hr	GRI Field
Beryllium	0.0000	0.00000010 g/bhp-hr	GRI Field
Phosphorus	0.0025	0.00006520 g/bhp-hr	GRI Field
Chromium	0.0003	0.00000820 g/bhp-hr	GRI Field
Manganese	0.0007	0.00001750 g/bhp-hr	GRI Field
Nickel	0.0002	0.00000610 g/bhp-hr	GRI Field
Cobalt	0.0001	0.00000160 g/bhp-hr	GRI Field
Arsenic	0.0000	0.00000060 g/bhp-hr	GRI Field
Selenium	0.0000	0.00000030 g/bhp-hr	GRI Field

Cadmium	0.0000	0.00000020	g/bhp-hr	GRI Field
Mercury	0.0001	0.00000270	g/bhp-hr	GRI Field
Lead	0.0001	0.00000340	g/bhp-hr	GRI Field
Total	1.5786			

Criteria Pollutants

PM	1.0996	0.02897200	g/bhp-hr	EPA
CO	80.0169	2.10828420	g/bhp-hr	GRI Field
NMHC	7.3584	0.19387800	g/bhp-hr	GRI Field
NMEHC	0.3499	0.00921840	g/bhp-hr	EPA
NOx	47.5241	1.25216290	g/bhp-hr	GRI Field
SO2	0.0390	0.00102720	g/bhp-hr	GRI Field

Other Pollutants

Methane	37.4675	0.98719230	g/bhp-hr	GRI Field
Acetylene	0.2720	0.00716540	g/bhp-hr	GRI Field
Ethylene	0.5296	0.01395450	g/bhp-hr	GRI Field
Ethane	5.6962	0.15008370	g/bhp-hr	GRI Field
Propane	0.6073	0.01600000	g/bhp-hr	GRI Field
Isobutane	0.1822	0.00480000	g/bhp-hr	GRI Field
Butane	0.1974	0.00520000	g/bhp-hr	GRI Field
Cyclopentane	0.0627	0.00165110	g/bhp-hr	GRI Field
Butyrald/Isobutyraldehyde	0.0509	0.00134000	g/bhp-hr	GRI Field
n-Pentane	3.0799	0.08115000	g/bhp-hr	GRI Field
Cyclohexane	0.2324	0.00612400	g/bhp-hr	GRI Field
Methylcyclohexane	0.3352	0.00883120	g/bhp-hr	GRI Field
n-Octane	0.1210	0.00318890	g/bhp-hr	GRI Field
1,3,5-Trimethylbenzene	0.1139	0.00300000	g/bhp-hr	GRI Field
n-Nonane	0.0202	0.00053260	g/bhp-hr	GRI Field
CO2	18,326.4907	482.86607780	g/bhp-hr	EPA
Vanadium	0.0000	0.00000070	g/bhp-hr	GRI Field
Copper	0.0008	0.00002050	g/bhp-hr	GRI Field
Molybdenum	0.0008	0.00002030	g/bhp-hr	GRI Field
Barium	0.0009	0.00002290	g/bhp-hr	GRI Field

Turbine Exhaust Emissions Calculations

Unit Number: 8 & 9 (Upgrade replacments to units 1 & 2)
Description: Solar Centaur 40-4702S

Note: The data on this worksheet applies to each individual emissions unit identified above.

Horsepower Calculations

6,325	ft above MSL	Elevation	
4,680	hp	Nameplate hp	Mfg. data
3,690	hp	NMAQB Site-rated hp	NMAQB Procedure # 02.002-00 (Nameplate hp x [29.9 - (ft above MSL / 1000)] / 29.9)
3,795	hp	Mfg. Site-rated hp	Mfg. data (Nominal @ 32 °F)

Fuel Consumption

9,278	Btu/hp-hr	Brake specific fuel consumption	Mfg. data (Nominal @ 32 °F)
35.21	MMBtu/hr	Hourly fuel consumption	Btu/hp-hr x Mfg. site-rated hp / 1,000,000
900	Btu/scf	Field gas heating value	Nominal heat content
39,122	scf/hr	Hourly fuel consumption	MMBtu/hr x 1,000,000 / Btu/scf
8,760	hr/yr	Annual operating time	Harvest Four Corners, LLC
308,440	MMBtu/yr	Annual fuel consumption	MMBtu/hr x hr/yr
342.71	MMscf/yr	Annual fuel consumption	scf/hr x hr/yr / 1,000,000

Steady-State Emission Rates

Pollutants	Uncontrolled Emission Rates, pph	tpy
NO_X	3.52	15.43
CO	4.29	18.79
VOC	1.23	5.38

Emission rates (pph) taken from the Solar Data Sheet
Uncontrolled Emission Rates (tpy) = Uncontrolled Emission Rates (pph) x hr/yr / 2,000 lb/ton

Pollutants	Emission Factors, lb/MMBtu	Uncontrolled Emission Rates, pph	tpy
SO_2	3.40E-03	0.120	0.524
PM/TSP	6.60E-03	0.232	1.018
PM_{10}	6.60E-03	0.232	1.018
$PM_{2.5}$	6.60E-03	0.232	1.018

Emission factors (lb/MMBtu) taken from AP-42, Table 3.1-2a
Uncontrolled Emission Rates (pph) = lb/MMBtu x MMBtu/hr
Uncontrolled Emission Rates (tpy) = Uncontrolled Emission Rates (pph) x hr/yr / 2,000 lb/ton

Exhaust Parameters

811	°F	Exhaust temperature	Mfg. data (Nominal @ 32 °F)
74,565	cfm	Stack flowrate	Mfg. data (Nominal @ 90 °F)
2.50	ft	Stack exit diameter	Harvest Four Corners, LLC
4.91	ft^2	Stack exit area	3.1416 x ((ft / 2) ^2)
253.17	fps	Stack exit velocity	acfm / ft^2 / 60 sec/min
21.00	ft	Stack height	Harvest Four Corners, LLC

GRI-HAPCalc ® 3.01
Turbine Report

Facility ID:	**LA JARA C.S.**	**Notes:**	**Turbine Units 8 and/or 9 Solar Centaur 40-4702S (Upgrade)**
Operation Type:	**COMPRESSOR STATION**		
Facility Name:	**LA JARA COMPRESSOR STATION**		
User Name:	**Cirrus Consulting, LLC**		
Units of Measure:	**U.S. STANDARD**		

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

Turbine Unit

Unit Name: 8 & 9

Hours of Operation: 8,760 Yearly

Rate Power: 3795 hp

Fuel Type: NATURAL GAS

Emission Factor Set: FIELD > EPA > LITERATURE

Additional EF Set: -NONE-

Calculated Emissions (ton/yr)

Chemical Name	Emissions	Emission Factor	Emission Factor Set
HAPs			
PAHs	0.0004	0.00000970 g/bhp-hr	EPA
Formaldehyde	0.6201	0.01693680 g/bhp-hr	GRI Field
Acetaldehyde	0.6347	0.01733570 g/bhp-hr	GRI Field
1,3-Butadiene	0.0023	0.00006160 g/bhp-hr	GRI Field
Acrolein	0.0095	0.00026000 g/bhp-hr	GRI Field
Propional	0.0317	0.00086500 g/bhp-hr	GRI Field
Propylene Oxide	0.0047	0.00012730 g/bhp-hr	EPA
Benzene	0.0197	0.00053840 g/bhp-hr	GRI Field
Toluene	0.0150	0.00041100 g/bhp-hr	GRI Field
Ethylbenzene	0.0051	0.00014050 g/bhp-hr	EPA
Xylenes(m,p,o)	0.0455	0.00124410 g/bhp-hr	GRI Field
2,2,4-Trimethylpentane	0.0588	0.00160530 g/bhp-hr	GRI Field
n-Hexane	0.0551	0.00150580 g/bhp-hr	GRI Field
Phenol	0.0040	0.00011010 g/bhp-hr	GRI Field
Naphthalene	0.0003	0.00000760 g/bhp-hr	GRI Field
2-Methylnaphthalene	0.0000	0.00000130 g/bhp-hr	GRI Field
Biphenyl	0.0121	0.00033050 g/bhp-hr	GRI Field
Phenanthrene	0.0000	0.00000050 g/bhp-hr	GRI Field
Chrysene	0.0000	0.00000100 g/bhp-hr	GRI Field
Beryllium	0.0000	0.00000010 g/bhp-hr	GRI Field
Phosphorus	0.0024	0.00006520 g/bhp-hr	GRI Field
Chromium	0.0003	0.00000820 g/bhp-hr	GRI Field
Manganese	0.0006	0.00001750 g/bhp-hr	GRI Field
Nickel	0.0002	0.00000610 g/bhp-hr	GRI Field
Cobalt	0.0001	0.00000160 g/bhp-hr	GRI Field
Arsenic	0.0000	0.00000060 g/bhp-hr	GRI Field
Selenium	0.0000	0.00000030 g/bhp-hr	GRI Field

Cadmium	0.0000	0.00000020	g/bhp-hr	GRI Field
Mercury	0.0001	0.00000270	g/bhp-hr	GRI Field
Lead	0.0001	0.00000340	g/bhp-hr	GRI Field
Total	1.5228			

Criteria Pollutants

PM	1.0607	0.02897200	g/bhp-hr	EPA
CO	77.1897	2.10828420	g/bhp-hr	GRI Field
NMHC	7.0984	0.19387800	g/bhp-hr	GRI Field
NMEHC	0.3375	0.00921840	g/bhp-hr	EPA
NOx	45.8449	1.25216290	g/bhp-hr	GRI Field
SO2	0.0376	0.00102720	g/bhp-hr	GRI Field

Other Pollutants

Methane	36.1436	0.98719230	g/bhp-hr	GRI Field
Acetylene	0.2623	0.00716540	g/bhp-hr	GRI Field
Ethylene	0.5109	0.01395450	g/bhp-hr	GRI Field
Ethane	5.4949	0.15008370	g/bhp-hr	GRI Field
Propane	0.5858	0.01600000	g/bhp-hr	GRI Field
Isobutane	0.1757	0.00480000	g/bhp-hr	GRI Field
Butane	0.1904	0.00520000	g/bhp-hr	GRI Field
Cyclopentane	0.0605	0.00165110	g/bhp-hr	GRI Field
Butyrald/Isobutyraldehyde	0.0491	0.00134000	g/bhp-hr	GRI Field
n-Pentane	2.9711	0.08115000	g/bhp-hr	GRI Field
Cyclohexane	0.2242	0.00612400	g/bhp-hr	GRI Field
Methylcyclohexane	0.3233	0.00883120	g/bhp-hr	GRI Field
n-Octane	0.1168	0.00318890	g/bhp-hr	GRI Field
1,3,5-Trimethylbenzene	0.1098	0.00300000	g/bhp-hr	GRI Field
n-Nonane	0.0195	0.00053260	g/bhp-hr	GRI Field
CO2	17,678.9609	482.86607780	g/bhp-hr	EPA
Vanadium	0.0000	0.00000070	g/bhp-hr	GRI Field
Copper	0.0008	0.00002050	g/bhp-hr	GRI Field
Molybdenum	0.0007	0.00002030	g/bhp-hr	GRI Field
Barium	0.0008	0.00002290	g/bhp-hr	GRI Field

Fuel sulfur content calculation from default AP-42 emission factor

AP-42, Table Table 3.1-2a:

SO_2 = 0.94 x S lb/MMBtu [h]

[h] *All sulfur in the fuel is assumed to be converted to SO_2.*

S = percent sulfur in fuel. Example, if sulfur content in the fuel is 3.4 percent,

then S = 3.4. ***If S is not available, use 3.4 E-03 lb/MMBtu for natural gas turbines,***

and 3.3 E-02 lb/MMBtu for distillate oil turbines (the equations are more accurate).

Back-calculation of fuel sulfur content from default AP-42 emission factor for turbines (3.40E-03 lb/MMscf):

Pollutant	AP-42 Default Fuel Sulfur Content, gr S/100 scf [5]	lb S/scf [4]	Total Gas Density lb/scf [3]	Sulfur Percent % (mass) [2]	Emission Factor 0.94 x S% = SO_2 lb/MMBtu [1]	EU 6 & 7 Calculated SO_2 lb/hr [6]	Is Sulfur % Below NSR A106.B Limit
Sulfur	1.349	1.927E-06	0.0533	0.00362	3.40E-03	0.1235	Yes

[1] Default SO2 emission factor (lb/MMBtu) using AP-42 Table 3.1-2a guidance for *when S content is not available*.

[2] AP-42 Table 3.1-2a: SO_2 lb/MMBtu = 0.94 x S (S = percent sulfur in fuel)

Therefore, **S** (%) = SO_2 lb/MMBtu/ 0.94

[3] Total gas lb/scf based on the most current extended gas analysis: 0.0533 lb/scf

[4] Sulfur (S) lb/scf = Total gas density (lb/scf) x (%S/100)

[5] Sulfur (S) gr/100 scf = S (lb/scf) x (7000 gr/ 1 lb) x 100

[6] Worst-case turbines, each (updated units 6 and 7) site-rated heat rate 36.31 MMBtu/hr.

Calculated SO2, lb/hr = SO2 emission factor (lb/MMBtu) x turbine site-rated heat rate (MMBtu/hr)

Engine Exhaust Emissions Calculations

Unit Number: 4 - EXEMPT emergency generator
Description: Waukesha F3521G (Naturally Aspirated)

Note: The data on this worksheet applies to each individual emissions unit identified above.

Horsepower Calculations

6,325	ft above MSL	Elevation	
515	hp	Nameplate hp (ISO)	Mfg. data
440	hp	NMAQB Site-rated hp	NMAQB Procedure # 02.002-00 (loss of 3% for every 1,000 ft over 1,500 ft)

Engine Specifications

1200	rpm	Engine rpm	Mfg. data
3520	in^3	Engine displacement	Mfg. data
82.59	psi	BMEP	Mfg. data (+[(792,000 x NMAQB Site-rated hp) / (rpm * in^3)])

Fuel Consumption

7301	Btu/hp-hr	Brake specific fuel consumption	Mfg. data
3.216	MMBtu/hr	Hourly fuel consumption	Btu/hp-hr x NMAQB Site-rated hp / 1,000,000
3,573	scf/hr	Hourly fuel consumption	MMBtu/hr x 1,000,000 / Btu/scf
500	hr/yr	Annual operating time	Harvest
1,608	MMBtu/yr	Annual fuel consumption	MMBtu/hr x hr/yr
1.79	MMscf/yr	Annual fuel consumption	scf/hr x hr/yr / 1,000,000
900	Btu/scf	Field gas heating value	Nominal heat content

Steady-State Emission Rates

Pollutants	Emission Factors, g/hp-hr	Uncontrolled Emission Rates, pph	tpy
NOX	13.0	12.62	3.16
CO	9.0	8.74	2.18
VOC	0.3	2.91E-01	7.28E-02

NOX, CO & VOC emissions taken from Waukesha Bulletin 7008 1211
Uncontrolled Emission Rates (pph) = g/hp-hr x NMAQB Site-rated hp / 453.59 g/lb
Uncontrolled Emission Rates (tpy) = Uncontrolled Emission Rates (pph) x hr/yr / 2,000 lb/ton

Pollutants	Emission Factors, lb/MMBtu	Uncontrolled Emission Rates, pph	tpy
SO_2	3.40E-03	1.09E-02	2.73E-03
PM/TSP	1.94E-02	6.24E-02	1.56E-02
PM10	1.94E-02	6.24E-02	1.56E-02
PM2.5	1.94E-02	6.24E-02	1.56E-02

SO_2 emission factor (lb/MMBtu) taken from AP-42, Table 3.1-2a

Particulate emission factors taken from AP-42, Table 3.2-3
Particulate factors include both filterable and condensible emissions
Uncontrolled Emission Rate (pph) = lb/MMBtu x MMBtu/hr
Uncontrolled Emission Rate (tpy) = Uncontrolled Emission Rate (pph) x hr/yr / 2,000 lb/ton

Exhaust Parameters

1053	°F	Stack exit temperature	Mfg. data
2211.93	acfm	Stack flowrate	Mfg. data
0.42	ft	Stack exit diameter	Harvest
0.14	ft^2	Stack exit area	3.1416 x ((ft / 2) ^2)
270.37	fps	Stack exit velocity	acfm / ft^2 / 60 sec/min
25	ft	Stack height	Harvest

GRI-HAPCalc ® 3.01
Engines Report

Facility ID:	**LA JARA C.S.**	**Notes:**	**Unit 4 Emergency generator - Exempt** **4SRB RICE**
Operation Type:	**COMPRESSOR STATION**		
Facility Name:	**LA JARA COMPRESSOR STATION**		
User Name:	**Cirrus Consulting, LLC**		
Units of Measure:	**U.S. STANDARD**		

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

Engine Unit

Unit Name: 4

Hours of Operation:	500	Yearly
Rate Power:	440	hp
Fuel Type:	NATURAL GAS	
Engine Type:	4-Stroke, Rich Burn	
Emission Factor Set:	EPA > FIELD > LITERATURE	
Additional EF Set:	-NONE-	

Calculated Emissions (ton/yr)

Chemical Name	Emissions	Emission Factor	Emission Factor Set
HAPs			
Formaldehyde	0.0164	0.06765700 g/bhp-hr	EPA
Methanol	0.0024	0.01009900 g/bhp-hr	EPA
Acetaldehyde	0.0022	0.00920800 g/bhp-hr	EPA
1,3-Butadiene	0.0005	0.00218810 g/bhp-hr	EPA
Acrolein	0.0021	0.00867990 g/bhp-hr	EPA
Benzene	0.0013	0.00521450 g/bhp-hr	EPA
Toluene	0.0004	0.00184160 g/bhp-hr	EPA
Ethylbenzene	0.0000	0.00008180 g/bhp-hr	EPA
Xylenes(m,p,o)	0.0002	0.00064360 g/bhp-hr	EPA
Styrene	0.0000	0.00003930 g/bhp-hr	EPA
Naphthalene	0.0001	0.00032050 g/bhp-hr	EPA
Ethylene Dibromide	0.0000	0.00007030 g/bhp-hr	EPA
Vinyl Chloride	0.0000	0.00002370 g/bhp-hr	EPA
Methylene Chloride	0.0000	0.00013600 g/bhp-hr	EPA
1,1-Dichloroethane	0.0000	0.00003730 g/bhp-hr	EPA
1,3-Dichloropropene	0.0000	0.00004190 g/bhp-hr	EPA
Chlorobenzene	0.0000	0.00004260 g/bhp-hr	EPA
Chloroform	0.0000	0.00004520 g/bhp-hr	EPA
1,1,2-Trichloroethane	0.0000	0.00005050 g/bhp-hr	EPA
1,1,2,2-Tetrachloroethane	0.0000	0.00008350 g/bhp-hr	EPA
Carbon Tetrachloride	0.0000	0.00005840 g/bhp-hr	EPA
Total	0.0256		

Criteria Pollutants

PM	0.0155	0.06405970	g/bhp-hr	EPA
CO	2.9747	12.27727470	g/bhp-hr	EPA
NMEHC	0.0237	0.09769010	g/bhp-hr	EPA
NOx	1.7672	7.29375730	g/bhp-hr	EPA
SO2	0.0005	0.00194060	g/bhp-hr	EPA

Other Pollutants

Butryaldehyde	0.0000	0.00016040	g/bhp-hr	EPA
Methane	0.1839	0.75907880	g/bhp-hr	EPA
Ethane	0.0563	0.23234410	g/bhp-hr	EPA
1,2-Dichloroethane	0.0000	0.00003730	g/bhp-hr	EPA
1,2-Dichloropropane	0.0000	0.00004290	g/bhp-hr	EPA
CO2	87.9607	363.03769350	g/bhp-hr	EPA

Turbine & Compressor Blowdown Emissions Calculations

Unit Number: SSM
Description: Turbine, Compressor & Piping Associated With Station

Throughput

5	# of units	Number of units	Harvest
83	events/yr/unit	Blowdowns per year per unit	Harvest
4,357	scf/event	Gas loss per blowdown (compressor)	Harvest
12,400	scf/event	Gas loss per blowdown (turbine)	Harvest
6,979,291	scf/yr	Annual gas loss	# of units x events/yr/unit x [scf/event (compressor) + scf/event (turbine)]

Emission Rates

Pollutants	Emission Factors, lb/scf	Uncontrolled, Emission Rates, tpy
VOC	9.283E-03	32.39
2,2,4-Trimethylpentane	6.339E-06	2.21E-02
Benzene	1.976E-05	6.90E-02
Ethylbenzene	6.156E-06	2.15E-02
n-Hexane	1.594E-04	5.56E-01
Toluene	2.744E-05	9.58E-02
Xylene	1.119E-06	3.91E-03

Emission factors calculated from gas composition (see table below)
Uncontrolled Emission Rates (tpy) = scf/yr x lb/scf / 2,000 lb/ton

Gas Composition

Components	Mole Percents, %	Molecular Weights, lb/lb-mole	Emission Factors, lb/scf
Carbon dioxide	1.6565	44.01	1.922E-03
Hydrogen sulfide	0.0000	34.07	0.000E+00
Nitrogen	1.0688	28.01	7.891E-04
Methane	82.6372	16.04	3.494E-02
Ethane	8.0037	30.07	6.343E-03
Propane	3.8334	44.09	4.455E-03
Isobutane	0.6777	58.12	1.038E-03
n-Butane	1.1402	58.12	1.747E-03
Isopentane	0.3515	72.15	6.684E-04
n-Pentane	0.2576	72.15	4.899E-04
Cyclopentane	0.0098	70.14	1.812E-05
n-Hexane	0.0702	86.17	1.594E-04
Cyclohexane	0.0237	84.16	5.257E-05
Other hexanes	0.1446	86.18	3.285E-04
Heptanes	0.0446	100.20	1.178E-04
Methylcyclohexane	0.0379	98.19	9.809E-05
2,2,4-Trimethylpentane	0.0024	100.21	6.339E-06
Benzene	0.0096	78.11	1.976E-05
Toluene	0.0113	92.14	2.744E-05
Ethylbenzene	0.0022	106.17	6.156E-06
Xylenes	0.0004	106.17	1.119E-06
C8+ Heavies	0.0170	110.00	4.929E-05
Total	100.0003		5.327E-02
Total VOC			9.283E-03

Gas stream composition obtained from the Inlet - La Jara extended gas analysis dated December 31, 2019.
Emission Factors (lb/scf) = (% / 100) x lb/lb-mole / 379.4 scf/lb-mole

Pig Launcher Emissions Calculations

Unit Number: P1
Description: Pig Launcher

Throughput

215	events/yr	Blowdowns per year	Harvest
10,043	scf/event	Gas loss per blowdown	Harvest
2,159,245	scf/yr	Annual gas loss	events/yr x scf/event

Emission Rates

Pollutants	Emission Factors, lb/scf	Uncontrolled, Emission Rates, tpy
VOC	9.283E-03	10.02
2,2,4-Trimethylpentane	6.339E-06	6.84E-03
Benzene	1.976E-05	2.13E-02
Ethylbenzene	6.156E-06	6.65E-03
n-Hexane	1.594E-04	1.72E-01
Toluene	2.744E-05	2.96E-02
Xylene	1.119E-06	1.21E-03

Emission factors calculated from gas composition (see table below)
Uncontrolled Emission Rates (tpy) = scf/yr x lb/scf / 2,000 lb/ton

Gas Composition

Components	Mole Percents, %	Molecular Weights, lb/lb-mole	Emission Factors, lb/scf
Carbon dioxide	1.6565	44.01	1.922E-03
Hydrogen sulfide	0.0000	34.07	0.000E+00
Nitrogen	1.0688	28.01	7.891E-04
Methane	82.6372	16.04	3.494E-02
Ethane	8.0037	30.07	6.343E-03
Propane	3.8334	44.09	4.455E-03
Isobutane	0.6777	58.12	1.038E-03
n-Butane	1.1402	58.12	1.747E-03
Isopentane	0.3515	72.15	6.684E-04
n-Pentane	0.2576	72.15	4.899E-04
Cyclopentane	0.0098	70.14	1.812E-05
n-Hexane	0.0702	86.17	1.594E-04
Cyclohexane	0.0237	84.16	5.257E-05
Other hexanes	0.1446	86.18	3.285E-04
Heptanes	0.0446	100.20	1.178E-04
Methylcyclohexane	0.0379	98.19	9.809E-05
2,2,4-Trimethylpentane	0.0024	100.21	6.339E-06
Benzene	0.0096	78.11	1.976E-05
Toluene	0.0113	92.14	2.744E-05
Ethylbenzene	0.0022	106.17	6.156E-06
Xylenes	0.0004	106.17	1.119E-06
C8+ Heavies	0.0170	110.00	4.929E-05
Total	100.0003		
Total VOC			9.283E-03

Gas stream composition obtained from the Inlet - La Jara extended gas analysis dated December 31, 2019.
Emission Factors (lb/scf) = (% / 100) x lb/lb-mole / 379.4 scf/lb-mole

Pig Receiver Emissions Calculations

Unit Number: P2
Description: Pig Receiver

Throughput

510	events/yr	Blowdowns per year	Harvest
374	scf/event	Gas loss per blowdown	Harvest
190,740	scf/yr	Annual gas loss	events/yr x scf/event

Emission Rates

Pollutants	Emission Factors, lb/scf	Uncontrolled, Emission Rates, tpy
VOC	9.283E-03	0.885
2,2,4-Trimethylpentane	6.339E-06	6.05E-04
Benzene	1.976E-05	1.88E-03
Ethylbenzene	6.156E-06	5.87E-04
n-Hexane	1.594E-04	1.52E-02
Toluene	2.744E-05	2.62E-03
Xylene	1.119E-06	1.07E-04

Emission factors calculated from gas composition (see table below)
Uncontrolled Emission Rates (tpy) = scf/yr x lb/scf / 2,000 lb/ton

Gas Composition

Components	Mole Percents, %	Molecular Weights, lb/lb-mole	Emission Factors, lb/scf
Carbon dioxide	1.6565	44.01	1.922E-03
Hydrogen sulfide	0.0000	34.07	0.000E+00
Nitrogen	1.0688	28.01	7.891E-04
Methane	82.6372	16.04	3.494E-02
Ethane	8.0037	30.07	6.343E-03
Propane	3.8334	44.09	4.455E-03
Isobutane	0.6777	58.12	1.038E-03
n-Butane	1.1402	58.12	1.747E-03
Isopentane	0.3515	72.15	6.684E-04
n-Pentane	0.2576	72.15	4.899E-04
Cyclopentane	0.0098	70.14	1.812E-05
n-Hexane	0.0702	86.17	1.594E-04
Cyclohexane	0.0237	84.16	5.257E-05
Other hexanes	0.1446	86.18	3.285E-04
Heptanes	0.0446	100.20	1.178E-04
Methylcyclohexane	0.0379	98.19	9.809E-05
2,2,4-Trimethylpentane	0.0024	100.21	6.339E-06
Benzene	0.0096	78.11	1.976E-05
Toluene	0.0113	92.14	2.744E-05
Ethylbenzene	0.0022	106.17	6.156E-06
Xylenes	0.0004	106.17	1.119E-06
C8+ Heavies	0.0170	110.00	4.929E-05
Total	100.0003		
Total VOC			9.283E-03

Gas stream composition obtained from the Inlet - La Jara extended gas analysis dated December 31, 2019.
Emission Factors (lb/scf) = (% / 100) x lb/lb-mole / 379.4 scf/lb-mole

Storage Tank Emissions Data and Calculations

Unit Number: Storage tanks
Description: Regulated storage tank emissions summary

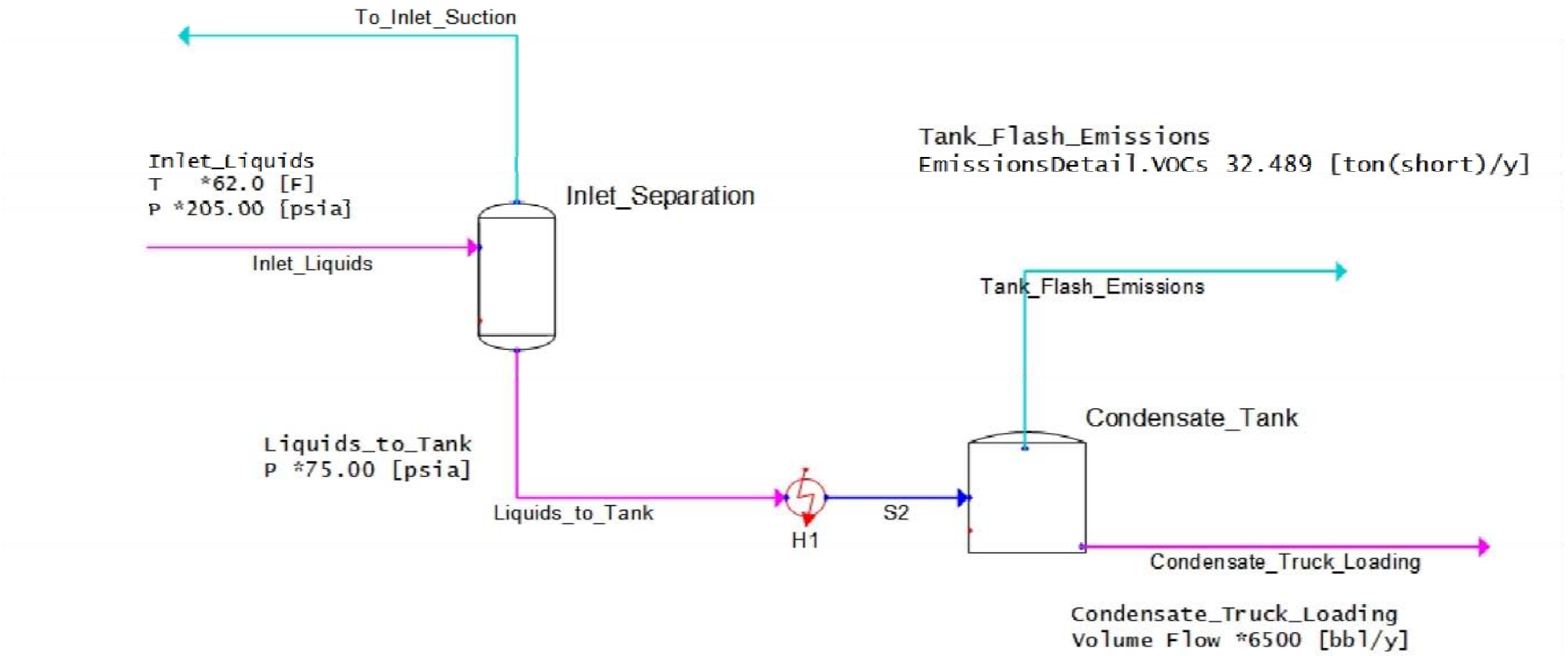
Source	Description	Uncontrolled Working / Breathing (W/B) Losses (TANKS) (lb/yr)	(ton/yr)	Working / Breathing (W/B) Losses with Safety Factor Applied - *VOC only* (ton/yr)	Calculated Raw Flash Emissions (HYSYS, ProMax or VMGSim) (ton/yr)	Flash Emissions with Safety Factor Applied - *VOC only* (ton/yr)	Total Uncontrolled Emissions (including Safety Factor) (ton/yr)
Tank T1	Condensate Storage Tank (400 bbl)						
VOC	*(includes facility-wide flash emissions, including from the Unit 18 3-phase separator)*	3,586.86	1.79	2.24	32.49	40.61	42.85
Benzene		14.92	7.46E-03	9.33E-03	1.58E-01	0.198	0.207
Ethylbenzene		0.32	1.60E-04	2.00E-04	2.98E-03	3.72E-03	3.92E-03
n-Hexane		684.21	0.342	4.28E-01	3.60	4.50E+00	4.93
Toluene		13.87	6.94E-03	8.67E-03	1.26E-01	0.157	0.166
Xylenes		1.89	9.45E-04	1.18E-03	1.52E-02	1.90E-02	2.02E-02
Tank T2	Condensate Storage Tank (400 bbl)						
VOC		3,586.86	1.79	2.24	with T1	with T1	2.24
Benzene		14.92	7.46E-03	9.33E-03	with T1	with T1	9.33E-03
Ethylbenzene		0.32	1.60E-04	2.00E-04	with T1	with T1	2.00E-04
n-Hexane		684.21	3.42E-01	4.28E-01	with T1	with T1	0.43
Toluene		13.87	6.94E-03	8.67E-03	with T1	with T1	8.67E-03
Xylenes		1.89	9.45E-04	1.18E-03	with T1	with T1	1.18E-03
Tank T3	Condensate Storage Tank (400 bbl)						
VOC		3,586.86	1.79	2.24	with T1	with T1	2.24
Benzene		14.92	7.46E-03	9.33E-03	with T1	with T1	9.33E-03
Ethylbenzene		0.32	1.60E-04	2.00E-04	with T1	with T1	2.00E-04
n-Hexane		684.21	3.42E-01	4.28E-01	with T1	with T1	0.43
Toluene		13.87	6.94E-03	8.67E-03	with T1	with T1	8.67E-03
Xylenes		1.89	9.45E-04	1.18E-03	with T1	with T1	1.18E-03
Tank T4	Produced Water Storage Tank 300 bbl)						
VOC		0.13	0.13	0.16	N/A	N/A	0.16
Benzene		3.36E-03	3.36E-03	0.00	N/A	N/A	4.20E-03
Ethylbenzene		3.36E-04	3.36E-04	0.00	N/A	N/A	4.20E-04
n-Hexane		1.06E-02	1.06E-02	0.01	N/A	N/A	1.32E-02
Toluene		4.32E-03	4.32E-03	0.01	N/A	N/A	5.40E-03
Xylenes		2.88E-03	2.88E-03	0.00	N/A	N/A	3.60E-03
FACILITY STORAGE TANK EMISSIONS TOTALS							
VOC		**10,760.71**	**5.51**	**6.88**	**32.49**	**40.61**	**47.49**
Benzene		44.76	2.57E-02	3.22E-02	0.00	0.20	0.23
Ethylbenzene		0.96	8.16E-04	1.02E-03	2.98E-03	3.72E-03	4.74E-03
n-Hexane		2,052.64	1.04	1.30	3.60	4.50	5.80
Methanol		0.00	0.00	0.00	0.00	0.00	0.00
Toluene		41.61	2.51E-02	3.14E-02	1.26E-01	0.16	0.19
Xylene		5.67	5.72E-03	7.14E-03	1.52E-02	1.90E-02	2.61E-02
Total HAP		**2,145.65**	**1.09**	**1.37**	**3.74**	**4.88**	**6.25**

Working/breathing losses are calculated using TANKS 4.0.9d.
Facility-wide VOC flash emissions are calculated using ProMax process simulation software.

Safety Factor Applied = **1.25**

(A safety factor of "1" means no safety factor was applied.)

La Jara – Condensate Tank Flash Model



/Condensate_Truck_Loading (Material Stream)

Thermo Model: Advanced Peng-Robinson

Connections

Material Inlets

	Connection	Up Stream Unit Op
In	Condensate_Tank.Liq0	---

Material Outlets

	Connection	Down Stream Unit Op
Out	<Disconnected>	---

Equilibrium Results

	Bulk	Vap	Liq0	Liq1
Phase Frac [Fraction]	1.00	0.00	1.00	
T [F]	62.0	62.0	62.0	
P [psia]	11.90	11.90	11.90	
Mole Flow [lbmol/h]	1.96	0.00	1.96	
Mass Flow [lb/h]	178.93	0.00	178.93	
Volume Flow [ft3/s]	0.001	0.000	0.001	
Fraction [Fraction]				
NITROGEN	5.98E-07	5.14E-04	5.98E-07	
METHANE	7.38E-04	0.1736	7.38E-04	
CARBON DIOXIDE	1.98E-04	0.0153	1.98E-04	
ETHANE	0.0064	0.2178	0.0064	
PROPANE	0.0298	0.2722	0.0298	
ISOBUTANE	0.0183	0.0634	0.0183	
n-BUTANE	0.0504	0.1154	0.0504	
ISOPENTANE	0.0483	0.0411	0.0483	
n-PENTANE	0.0524	0.0343	0.0524	
n-HEXANE	0.2552	0.0434	0.2552	
BENZENE	0.0122	0.0021	0.0122	
CYCLOHEXANE	0.0481	0.0058	0.0481	
n-HEPTANE	0.2058	0.0105	0.2058	
TOLUENE	0.0333	0.0014	0.0333	
n-OCTANE	0.1696	0.0027	0.1696	
ETHYLBENZENE	0.0020	2.91E-05	0.0020	
o-XYLENE	0.0176	1.49E-04	0.0176	
n-NONANE	0.0334	1.64E-04	0.0334	
n-DECANE	0.0160	2.41E-05	0.0160	
2,2,4-TRIMETHYLPENTANE	0.00	0.00E+00	0.00	
MassFraction [Fraction]				
NITROGEN	1.83E-07	3.29E-04	1.83E-07	
METHANE	1.29E-04	0.0636	1.29E-04	
CARBON DIOXIDE	9.51E-05	0.0154	9.51E-05	
ETHANE	0.0021	0.1496	0.0021	
PROPANE	0.0144	0.2741	0.0144	
ISOBUTANE	0.0116	0.0842	0.0116	
n-BUTANE	0.0320	0.1531	0.0320	
ISOPENTANE	0.0381	0.0678	0.0381	
n-PENTANE	0.0413	0.0565	0.0413	
n-HEXANE	0.2403	0.0854	0.2403	
BENZENE	0.0104	0.0038	0.0104	
CYCLOHEXANE	0.0442	0.0112	0.0442	
n-HEPTANE	0.2254	0.0239	0.2254	
TOLUENE	0.0335	0.0030	0.0335	
n-OCTANE	0.2118	0.0071	0.2118	
ETHYLBENZENE	0.0023	7.06E-05	0.0023	
o-XYLENE	0.0205	3.61E-04	0.0205	
n-NONANE	0.0469	4.80E-04	0.0469	
n-DECANE	0.0249	7.83E-05	0.0249	
2,2,4-TRIMETHYLPENTANE	0.00	0.00E+00	0.00	

The HAP mole fractions above are input to the 'Normalized La Jara Compressor Station Stored Condensate Liquid Speciation Profile' to represent post-flashed condensate in the TANKS calculations.

/Inlet_Liquids (Material Stream)

Thermo Model: Advanced Peng-Robinson

Connections

Material Inlets

	Connection	Up Stream Unit Op
In	<Disconnected>	---

Material Outlets

	Connection	Down Stream Unit Op
Out	Inlet_Separation.In0	---

Equilibrium Results

	Bulk	Vap	Liq0	Liq1
Phase Frac [Fraction]	1.00	0.00	1.00	0.00
T [F]	62.0	62.0	62.0	62.0
P [psia]	205.00	205.00	205.00	205.00
Mole Flow [lbmol/h]	2.24	0.00	2.24	0.00
Mass Flow [lb/h]	190.01	0.00	190.01	0.00
Volume Flow [ft3/s]	0.001	0.000	0.001	0.000
Fraction [Fraction]				
NITROGEN	2.40E-04	0.0177	2.40E-04	2.40E-04
METHANE	0.0360	0.7661	0.0360	0.0360
CARBON DIOXIDE	0.0023	0.0166	0.0023	0.0023
ETHANE	0.0312	0.1051	0.0312	0.0312
PROPANE	0.0550	0.0538	0.0550	0.0550
ISOBUTANE	0.0226	0.0089	0.0226	0.0226
n-BUTANE	0.0561	0.0148	0.0561	0.0561
ISOPENTANE	0.0465	0.0049	0.0465	0.0465
n-PENTANE	0.0493	0.0040	0.0493	0.0493
n-HEXANE	0.2277	0.0052	0.2277	0.2277
BENZENE	0.0109	2.43E-04	0.0109	0.0109
CYCLOHEXANE	0.0427	6.85E-04	0.0427	0.0427
n-HEPTANE	0.1811	0.0013	0.1811	0.1811
TOLUENE	0.0293	1.73E-04	0.0293	0.0293
n-OCTANE	0.1487	3.71E-04	0.1487	0.1487
ETHYLBENZENE	0.0017	3.83E-06	0.0017	0.0017
o-XYLENE	0.0154	1.98E-05	0.0154	0.0154
n-NONANE	0.0293	2.40E-05	0.0293	0.0293
n-DECANE	0.0140	3.80E-06	0.0140	0.0140
2,2,4-TRIMETHYLPENTANE	0.00	0.00E+00	0.00	0.00
MassFraction [Fraction]				
NITROGEN	7.91E-05	0.0227	7.91E-05	7.91E-05
METHANE	0.0068	0.5640	0.0068	0.0068
CARBON DIOXIDE	0.0012	0.0336	0.0012	0.0012
ETHANE	0.0110	0.1451	0.0110	0.0110
PROPANE	0.0286	0.1088	0.0286	0.0286
ISOBUTANE	0.0155	0.0236	0.0155	0.0155
n-BUTANE	0.0383	0.0396	0.0383	0.0383
ISOPENTANE	0.0395	0.0162	0.0395	0.0395
n-PENTANE	0.0419	0.0134	0.0419	0.0419
n-HEXANE	0.2308	0.0205	0.2308	0.2308
BENZENE	0.0100	8.71E-04	0.0100	0.0100
CYCLOHEXANE	0.0422	0.0026	0.0422	0.0422
n-HEPTANE	0.2135	0.0061	0.2135	0.2135
TOLUENE	0.0317	7.31E-04	0.0317	0.0317
n-OCTANE	0.1998	0.0019	0.1998	0.1998
ETHYLBENZENE	0.0022	1.86E-05	0.0022	0.0022
o-XYLENE	0.0193	9.65E-05	0.0193	0.0193
n-NONANE	0.0442	1.41E-04	0.0442	0.0442
n-DECANE	0.0235	2.48E-05	0.0235	0.0235
2,2,4-TRIMETHYLPENTANE	0.00	0.00E+00	0.00	0.00

/Liquids_to_Tank (Material Stream)

Thermo Model: Advanced Peng-Robinson

Connections

Material Inlets

	Connection	Up Stream Unit Op
In	Inlet_Separation.Liq0	---

Material Outlets

	Connection	Down Stream Unit Op
Out	H1	---

Equilibrium Results

	Bulk	Vap	Liq0	Liq1
Phase Frac [Fraction]	1.00	0.00	1.00	
T [F]	60.7	60.7	60.7	
P [psia]	75.00	75.00	75.00	
Mole Flow [lbmol/h]	2.18	0.00	2.18	
Mass Flow [lb/h]	188.55	0.00	188.55	
Volume Flow [ft3/s]	0.001	0.000	0.001	
Fraction [Fraction]				
NITROGEN	5.24E-05	0.0070	5.24E-05	
METHANE	0.0182	0.6771	0.0182	
CARBON DIOXIDE	0.0017	0.0215	0.0017	
ETHANE	0.0278	0.1532	0.0278	
PROPANE	0.0543	0.0822	0.0543	
ISOBUTANE	0.0229	0.0133	0.0229	
n-BUTANE	0.0570	0.0221	0.0570	
ISOPENTANE	0.0476	0.0070	0.0476	
n-PENTANE	0.0506	0.0058	0.0506	
n-HEXANE	0.2338	0.0070	0.2338	
BENZENE	0.0112	3.42E-04	0.0112	
CYCLOHEXANE	0.0438	9.44E-04	0.0438	
n-HEPTANE	0.1861	0.0017	0.1861	
TOLUENE	0.0301	2.32E-04	0.0301	
n-OCTANE	0.1528	4.52E-04	0.1528	
ETHYLBENZENE	0.0018	4.85E-06	0.0018	
o-XYLENE	0.0159	2.49E-05	0.0159	
n-NONANE	0.0301	2.78E-05	0.0301	
n-DECANE	0.0144	4.15E-06	0.0144	
2,2,4-TRIMETHYLPENTANE	0.00	0.00E+00	0.00	
MassFraction [Fraction]				
NITROGEN	1.69E-05	0.0081	1.69E-05	
METHANE	0.0034	0.4492	0.0034	
CARBON DIOXIDE	8.76E-04	0.0392	8.76E-04	
ETHANE	0.0096	0.1905	0.0096	
PROPANE	0.0276	0.1499	0.0276	
ISOBUTANE	0.0153	0.0320	0.0153	
n-BUTANE	0.0382	0.0532	0.0382	
ISOPENTANE	0.0396	0.0209	0.0396	
n-PENTANE	0.0421	0.0172	0.0421	
n-HEXANE	0.2324	0.0250	0.2324	
BENZENE	0.0101	0.0011	0.0101	
CYCLOHEXANE	0.0425	0.0033	0.0425	
n-HEPTANE	0.2151	0.0071	0.2151	
TOLUENE	0.0320	8.86E-04	0.0320	
n-OCTANE	0.2013	0.0021	0.2013	
ETHYLBENZENE	0.0022	2.13E-05	0.0022	
o-XYLENE	0.0194	1.09E-04	0.0194	
n-NONANE	0.0445	1.47E-04	0.0445	
n-DECANE	0.0236	2.44E-05	0.0236	
2,2,4-TRIMETHYLPENTANE	0.00	0.00E+00	0.00	

/S2 (Material Stream)

Thermo Model: Advanced Peng-Robinson

Connections

Material Inlets

	Connection	Up Stream Unit Op
In	H1	---

Material Outlets

	Connection	Down Stream Unit Op
Out	Condensate_Tank.In0	---

Equilibrium Results

	Bulk	Vap	Liq0	Liq1
Phase Frac [Fraction]	1.00	0.0040	0.9960	
T [F]	76.9	76.9	76.9	
P [psia]	75.00	75.00	75.00	
Mole Flow [lbmol/h]	2.18	0.01	2.17	
Mass Flow [lb/h]	188.55	0.22	188.33	
Volume Flow [ft3/s]	0.001	0.000	0.001	
Fraction [Fraction]				
NITROGEN	5.24E-05	0.0046	3.45E-05	
METHANE	0.0182	0.6184	0.0158	
CARBON DIOXIDE	0.0017	0.0230	0.0016	
ETHANE	0.0278	0.1732	0.0272	
PROPANE	0.0543	0.1006	0.0541	
ISOBUTANE	0.0229	0.0171	0.0229	
n-BUTANE	0.0570	0.0291	0.0571	
ISOPENTANE	0.0476	0.0096	0.0478	
n-PENTANE	0.0506	0.0080	0.0507	
n-HEXANE	0.2338	0.0105	0.2347	
BENZENE	0.0112	5.06E-04	0.0113	
CYCLOHEXANE	0.0438	0.0014	0.0440	
n-HEPTANE	0.1861	0.0027	0.1868	
TOLUENE	0.0301	3.68E-04	0.0302	
n-OCTANE	0.1528	7.54E-04	0.1534	
ETHYLBENZENE	0.0018	8.06E-06	0.0018	
o-XYLENE	0.0159	4.25E-05	0.0159	
n-NONANE	0.0301	4.90E-05	0.0302	
n-DECANE	0.0144	7.76E-06	0.0145	
2,2,4-TRIMETHYLPENTANE	0.00	0.00E+00	0.00	
MassFraction [Fraction]				
NITROGEN	1.69E-05	0.0049	1.11E-05	
METHANE	0.0034	0.3797	0.0029	
CARBON DIOXIDE	8.76E-04	0.0388	8.30E-04	
ETHANE	0.0096	0.1993	0.0094	
PROPANE	0.0276	0.1698	0.0274	
ISOBUTANE	0.0153	0.0380	0.0153	
n-BUTANE	0.0382	0.0646	0.0382	
ISOPENTANE	0.0396	0.0266	0.0396	
n-PENTANE	0.0421	0.0222	0.0421	
n-HEXANE	0.2324	0.0345	0.2326	
BENZENE	0.0101	0.0015	0.0101	
CYCLOHEXANE	0.0425	0.0046	0.0426	
n-HEPTANE	0.2151	0.0103	0.2154	
TOLUENE	0.0320	0.0013	0.0320	
n-OCTANE	0.2013	0.0033	0.2016	
ETHYLBENZENE	0.0022	3.28E-05	0.0022	
o-XYLENE	0.0194	1.73E-04	0.0195	
n-NONANE	0.0445	2.40E-04	0.0446	
n-DECANE	0.0236	4.22E-05	0.0237	
2,2,4-TRIMETHYLPENTANE	0.00	0.00E+00	0.00	

/Tank_Flash_Emissions (Material Stream)

Thermo Model: Advanced Peng-Robinson

Connections

Material Inlets

	Connection	Up Stream Unit Op
In	Condensate_Tank.Vap	---

Material Outlets

	Connection	Down Stream Unit Op
Out	<Disconnected>	---

Equilibrium Results

	Bulk	Vap	Liq0	Liq1
Phase Frac [Fraction]	1.00	1.00	0.00E+00	
T [F]	62.0	62.0	62.0	
P [psia]	11.90	11.90	11.90	
Mole Flow [lbmol/h]	0.22	0.22	0.00	
Mass Flow [lb/h]	9.62	9.62	0.00	
Volume Flow [ft3/s]	0.028	0.028	0.000	
Fraction [Fraction]				
NITROGEN	5.14E-04	5.14E-04	5.98E-07	
METHANE	0.1736	0.1736	7.38E-04	
CARBON DIOXIDE	0.0153	0.0153	1.98E-04	
ETHANE	0.2178	0.2178	0.0064	
PROPANE	0.2722	0.2722	0.0298	
ISOBUTANE	0.0634	0.0634	0.0183	
n-BUTANE	0.1154	0.1154	0.0504	
ISOPENTANE	0.0411	0.0411	0.0483	
n-PENTANE	0.0343	0.0343	0.0524	
n-HEXANE	0.0434	0.0434	0.2552	
BENZENE	0.0021	0.0021	0.0122	
CYCLOHEXANE	0.0058	0.0058	0.0481	
n-HEPTANE	0.0105	0.0105	0.2058	
TOLUENE	0.0014	0.0014	0.0333	
n-OCTANE	0.0027	0.0027	0.1696	
ETHYLBENZENE	2.91E-05	2.91E-05	0.0020	
o-XYLENE	1.49E-04	1.49E-04	0.0176	
n-NONANE	1.64E-04	1.64E-04	0.0334	
n-DECANE	2.41E-05	2.41E-05	0.0160	0
2,2,4-TRIMETHYLPENTANE	0.00E+00	0.00E+00	0.00	0
MassFraction [Fraction]				
NITROGEN	3.29E-04	3.29E-04	1.83E-07	7.814184
METHANE	0.0636	0.0636	1.29E-04	34.22612592
CARBON DIOXIDE	0.0154	0.0154	9.51E-05	
ETHANE	0.1496	0.1496	0.0021	
PROPANE	0.2741	0.2741	0.0144	
ISOBUTANE	0.0842	0.0842	0.0116	
n-BUTANE	0.1531	0.1531	0.0320	
ISOPENTANE	0.0678	0.0678	0.0381	
n-PENTANE	0.0565	0.0565	0.0413	
n-HEXANE	0.0854	0.0854	0.2403	
BENZENE	0.0038	0.0038	0.0104	
CYCLOHEXANE	0.0112	0.0112	0.0442	
n-HEPTANE	0.0239	0.0239	0.2254	
TOLUENE	0.0030	0.0030	0.0335	
n-OCTANE	0.0071	0.0071	0.2118	
ETHYLBENZENE	7.06E-05	7.06E-05	0.0023	
o-XYLENE	3.61E-04	3.61E-04	0.0205	
n-NONANE	4.80E-04	4.80E-04	0.0469	
n-DECANE	7.83E-05	7.83E-05	0.0249	
2,2,4-TRIMETHYLPENTANE	0.00E+00	0.00E+00	0.00	

VOC Mass Fraction of total = *0.7711* *(sum of NMNE hydrocarbon fractions)*

Mass flow (lb/hr) x VOC Mass Fraction of total = *7.418* *VOC lb/hr*

VOC lb/hr x 8760 hr/yr x 1 yr/8760 hr = *32.489* *VOC tpy* *Tank_Flash_Emissions, La Jara_Condensate Flash Model (Main Flowsheet)*

/To_Inlet_Suction (Material Stream)

Thermo Model: Advanced Peng-Robinson

Connections

Material Inlets

	Connection	Up Stream Unit Op
In	Inlet_Separation.Vap	---

Material Outlets

	Connection	Down Stream Unit Op
Out	<Disconnected>	---

Equilibrium Results

	Bulk	Vap	Liq0	Liq1
Phase Frac [Fraction]	1.00	1.00	0.00E+00	
T [F]	60.7	60.7	60.7	
P [psia]	75.00	75.00	75.00	
Mole Flow [lbmol/h]	0.06	0.06	0.00	
Mass Flow [lb/h]	1.46	1.46	0.00	
Volume Flow [ft3/s]	0.001	0.001	0.000	
Fraction [Fraction]				
NITROGEN	0.0070	0.0070	5.24E-05	
METHANE	0.6771	0.6771	0.0182	
CARBON DIOXIDE	0.0215	0.0215	0.0017	
ETHANE	0.1532	0.1532	0.0278	
PROPANE	0.0822	0.0822	0.0543	
ISOBUTANE	0.0133	0.0133	0.0229	
n-BUTANE	0.0221	0.0221	0.0570	
ISOPENTANE	0.0070	0.0070	0.0476	
n-PENTANE	0.0058	0.0058	0.0506	
n-HEXANE	0.0070	0.0070	0.2338	
BENZENE	3.42E-04	3.42E-04	0.0112	
CYCLOHEXANE	9.44E-04	9.44E-04	0.0438	
n-HEPTANE	0.0017	0.0017	0.1861	
TOLUENE	2.32E-04	2.32E-04	0.0301	
n-OCTANE	4.52E-04	4.52E-04	0.1528	
ETHYLBENZENE	4.85E-06	4.85E-06	0.0018	
o-XYLENE	2.49E-05	2.49E-05	0.0159	
n-NONANE	2.78E-05	2.78E-05	0.0301	
n-DECANE	4.15E-06	4.15E-06	0.0144	
2,2,4-TRIMETHYLPENTANE	0.00E+00	0.00E+00	0.00	
MassFraction [Fraction]				
NITROGEN	0.0081	0.0081	1.69E-05	
METHANE	0.4492	0.4492	0.0034	
CARBON DIOXIDE	0.0392	0.0392	8.76E-04	
ETHANE	0.1905	0.1905	0.0096	
PROPANE	0.1499	0.1499	0.0276	
ISOBUTANE	0.0320	0.0320	0.0153	
n-BUTANE	0.0532	0.0532	0.0382	
ISOPENTANE	0.0209	0.0209	0.0396	
n-PENTANE	0.0172	0.0172	0.0421	
n-HEXANE	0.0250	0.0250	0.2324	
BENZENE	0.0011	0.0011	0.0101	
CYCLOHEXANE	0.0033	0.0033	0.0425	
n-HEPTANE	0.0071	0.0071	0.2151	
TOLUENE	8.86E-04	8.86E-04	0.0320	
n-OCTANE	0.0021	0.0021	0.2013	
ETHYLBENZENE	2.13E-05	2.13E-05	0.0022	
o-XYLENE	1.09E-04	1.09E-04	0.0194	
n-NONANE	1.47E-04	1.47E-04	0.0445	
n-DECANE	2.44E-05	2.44E-05	0.0236	
2,2,4-TRIMETHYLPENTANE	0.00E+00	0.00E+00	0.00	

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	La Jara Condensate (400 bbl) 91,000 gpy
City:	Rio Arriba Co.
State:	New Mexico
Company:	Harvest Four Corners, LLC
Type of Tank:	Vertical Fixed Roof Tank
Description:	400 bbl / 16,800 gal) condensate tank Facility throughput 6,500 bpy (273,000 gpy), Divided by 3 tanks = 2166.7 bpy (91,000 gpy) per 400 bbl tank tank

Tank Dimensions

Shell Height (ft):		20.00
Diameter (ft):		12.00
Liquid Height (ft) :		19.00
Avg. Liquid Height (ft):		9.50
Volume (gallons):		16,800.00
Turnovers:		5.42
Net Throughput(gal/yr):		91,000.00
Is Tank Heated (y/n):	N	

Paint Characteristics

Shell Color/Shade:	Gray/Medium
Shell Condition	Good
Roof Color/Shade:	Gray/Medium
Roof Condition:	Good

Roof Characteristics

Type:	Cone	
Height (ft)		0.00
Slope (ft/ft) (Cone Roof)		0.06

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig)	0.03

Meterological Data used in Emissions Calculations: Albuquerque, New Mexico (Avg Atmospheric Pressure = 12.15 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

La Jara Condensate (400 bbl) 91,000 gpy - Vertical Fixed Roof Tank
Rio Arriba Co., New Mexico

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Condensate	All	67.36	53.93	80.79	59.23	4.6354	3.4979	6.0444	67.5050			92.15	
Benzene						1.4274	0.9846	2.0237	78.1100	0.0099	0.0042	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Butane						29.9323	23.3587	37.8099	58.1300	0.0572	0.5042	58.13	Option 1: VP60 = 26.098 VP70 = 31.306
Cyclohexane						1.4738	1.0254	2.0729	84.1600	0.0419	0.0182	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Decane (-n)						0.0395	0.0291	0.0536	142.2900	0.0236	0.0003	142.29	Option 1: VP60 = .033211 VP70 = .041762
Ethylbenzene						0.1396	0.0876	0.2162	106.1700	0.0022	0.0001	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Heptane (-n)						0.7600	0.5088	1.1128	100.2000	0.2135	0.0478	100.20	Option 3: A=37358, B=8.2585
Hexane (-n)						2.3100	1.6303	3.2059	86.1700	0.2804	0.1908	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isopentane						11.8640	8.7212	15.5743	72.1500	0.0361	0.1262	72.15	Option 1: VP60 = 10.005 VP70 = 12.53
Nonane (-n)						0.0784	0.0568	0.1080	128.2600	0.0444	0.0010	128.26	Option 1: VP60 = .065278 VP70 = .08309
Octane (-n)						0.1769	0.1254	0.2493	114.2300	0.2006	0.0105	114.23	Option 1: VP60 = .145444 VP70 = .188224
Pentane (-n)						8.0308	5.9649	10.6537	72.1500	0.0391	0.0925	72.15	Option 3: A=27691, B=7.558
Toluene						0.4136	0.2726	0.6120	92.1300	0.0318	0.0039	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Xylene (-o)						0.0921	0.0570	0.1446	106.1700	0.0194	0.0005	106.17	Option 2: A=6.998, B=1474.679, C=213.69

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

La Jara Condensate (400 bbl) 91,000 gpy - Vertical Fixed Roof Tank
Rio Arriba Co., New Mexico

Annual Emission Calcaulations

Standing Losses (lb):	2,908.8859
Vapor Space Volume (cu ft):	1,201.6592
Vapor Density (lb/cu ft):	0.0553
Vapor Space Expansion Factor:	0.4328
Vented Vapor Saturation Factor:	0.2770
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	1,201.6592
Tank Diameter (ft):	12.0000
Vapor Space Outage (ft):	10.6250
Tank Shell Height (ft):	20.0000
Average Liquid Height (ft):	9.5000
Roof Outage (ft):	0.1250
Roof Outage (Cone Roof)	
Roof Outage (ft):	0.1250
Roof Height (ft):	0.0000
Roof Slope (ft/ft):	0.0625
Shell Radius (ft):	6.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0553
Vapor Molecular Weight (lb/lb-mole):	67.5050
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	4.6354
Daily Avg. Liquid Surface Temp. (deg. R):	527.0322
Daily Average Ambient Temp. (deg. F):	56.1542
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	518.9042
Tank Paint Solar Absorptance (Shell):	0.6800
Tank Paint Solar Absorptance (Roof):	0.6800
Daily Total Solar Insulation Factor (Btu/sqft day):	1,765.3167
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.4328
Daily Vapor Temperature Range (deg. R):	53.7176
Daily Vapor Pressure Range (psia):	2.5465
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	4.6354
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	3.4979
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	6.0444
Daily Avg. Liquid Surface Temp. (deg R):	527.0322
Daily Min. Liquid Surface Temp. (deg R):	513.6028
Daily Max. Liquid Surface Temp. (deg R):	540.4617
Daily Ambient Temp. Range (deg. R):	27.9250
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.2770
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):	4.6354
Vapor Space Outage (ft):	10.6250
Working Losses (lb):	677.9736
Vapor Molecular Weight (lb/lb-mole):	67.5050
Vapor Pressure at Daily Average Liquid	

Surface Temperature (psia):	4.6354
Annual Net Throughput (gal/yr.):	91,000.0000
Annual Turnovers:	5.4167
Turnover Factor:	1.0000
Maximum Liquid Volume (gal):	16,800.0000
Maximum Liquid Height (ft):	19.0000
Tank Diameter (ft):	12.0000
Working Loss Product Factor:	1.0000

Total Losses (lb):	3,586.8595

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

La Jara Condensate (400 bbl) 91,000 gpy - Vertical Fixed Roof Tank
Rio Arriba Co., New Mexico

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Condensate	677.97	2,908.89	3,586.86
Butane	341.84	1,466.68	1,808.52
Isopentane	85.53	366.98	452.51
Pentane (-n)	62.72	269.11	331.83
Heptane (-n)	32.40	139.03	171.43
Octane (-n)	7.09	30.40	37.49
Nonane (-n)	0.69	2.98	3.68
Benzene	2.82	12.10	14.92
Toluene	2.62	11.25	13.87
Ethylbenzene	0.06	0.26	0.32
Xylene (-o)	0.36	1.53	1.89
Hexane (-n)	129.33	554.88	684.21
Decane (-n)	0.19	0.80	0.98
Cyclohexane	12.33	52.88	65.21

Truck Loading Emissions Calculations

Unit Number: L1
Description: Truck Loading (condensate)

Emission Factor

0.6		Saturation factor, S	AP-42, Table 5.2-1 (submerged loading & dedicated service)
7.43	psia	True vapor pressure of liquid, P	TANKS 4.0 output file
66.99	lb/lb-mole	Molecular weight of vapors, M	TANKS 4.0 output file
67.36	°F	Temperature of liquid	TANKS 4.0 output file
527.03	°R	Temperature of liquid, T	°F + 459.67
7.06	lb/10^3 gal	Emission factor, L	AP-42, Section 5.2, Equation 1

$$L = 12.46 \frac{SPM}{T}$$

Note: The total control efficiency is equal to the collection efficiency of the system (90 percent for trucks subjected to annual leak checks) times the control efficiency of the control device

Production Rate

8.40	10^3 gal/hr	Maximum hourly production rate	Harvest
273.00	10^3 gal/yr	Maximum annual production rate	Harvest

Steady-State Emission Rates

Pollutant	Uncontrolled Emission Rates, pph	tpy
VOC	59.28	0.963

Uncontrolled Emission Rate (pph) = lb/10^3 gal x 10^3 gal/hr
Uncontrolled Emission Rate (tpy) = lb/10^3 gal x 10^3 gal/yr / 2,000 lb/ton

Pollutants	Percent of VOC, %	Uncontrolled Emission Rates pph	tpy	Uncontrolled Emission Rates With Safety Factor Applied pph	tpy
Benzene	0.42	0.249	4.05E-03	0.311	5.06E-03
Ethylbenzene	0.01	5.93E-03	9.63E-05	7.41E-03	1.20E-04
n-Hexane	19.08	11.31	0.184	14.14	0.230
Toluene	0.39	0.231	3.76E-03	0.289	4.70E-03
m-Xylene	0.05	2.96E-02	4.82E-04	3.70E-02	6.02E-04

Percent of VOC calculated from the TANKS 4.0 results
Percent of VOC (%) = 100 x Pollutant Emission Rate (lb/yr) / Total VOC Emission Rate (lb/yr)

Safety Factor: **1.25**

Equipment Leaks Emissions Calculations

Unit Number: F1
Description: Valves, Connectors, Seals & Open-Ended Lines

Steady-State Emission Rates

Equipment	Number of Components, # of sources	Emission Factors, kg/hr/source	Emission Factors, lb/hr/source	Uncontrolled TOC Emission Rates, pph	tpy
Valves	504	0.0045	0.0099	4.99	21.85
Connectors	491	0.0002	0.0004	0.22	0.95
Pump Seals	0	0.0024	0.0053	0.00	0.00
Compressor Seals	44	0.0088	0.0194	0.85	3.73
Pressure Relief Valves	37	0.0088	0.0194	0.72	3.14
Open-Ended Lines	133	0.0020	0.0044	0.59	2.56
Total				**7.36**	**32.23**

Number of components based on the numbers of compressors and dehydrators at the station (see next page)
Emission factors taken from the EPA "1995 Protocol for Equipment Leak Emission Estimates"
Emission factors (lb/hr/source) = Emission factors (kg/hr/source) x 2.2 lb/kg
Uncontrolled TOC Emission Rates (pph) = lb/hr/source x # of sources
Uncontrolled TOC Emission Rates (tpy) = Uncontrolled TOC Emission Rates (pph) x 8,760 hr/yr / 2,000 lb/ton

Components	Mole Percents, %	Molecular Weights, lb/lb-mole	Component Weights, lb/lb-mole	Weight Percent of TOC, %	Uncontrolled Emission Rates, pph	tpy
Carbon dioxide	1.6565	44.010	72.903	3.800		
Hydrogen sulfide	0.0000	34.070	0.000	0.000		
Nitrogen	1.0688	28.013	29.941	1.560		
Methane	82.6372	16.043	1325.749	69.095		
Ethane	8.0037	30.070	240.671	12.543		
Propane	3.8334	44.097	169.041	8.810	6.48E-01	2.84
Isobutane	0.6777	58.123	39.390	2.053	1.51E-01	6.62E-01
n-Butane	1.1402	58.123	66.272	3.454	2.54E-01	1.11E+00
Isopentane	0.3515	72.150	25.361	1.322	9.73E-02	4.26E-01
n-Pentane	0.2576	72.150	18.586	0.969	7.13E-02	3.12E-01
Cyclopentane	0.0098	70.134	0.687	0.036	2.64E-03	1.15E-02
n-Hexane	0.0702	86.177	6.050	0.315	2.32E-02	1.02E-01
Cyclohexane	0.0237	84.161	1.995	0.104	7.65E-03	3.35E-02
Other hexanes	0.1446	86.177	12.461	0.649	4.78E-02	2.09E-01
Heptanes	0.0446	100.204	4.469	0.233	1.71E-02	7.51E-02
Methylcyclohexane	0.0379	98.188	3.721	0.194	1.43E-02	6.25E-02
2,2,4-Trimethylpentane	0.0024	114.231	0.274	0.014	1.05E-03	4.61E-03
Benzene	0.0096	78.114	0.750	0.039	2.88E-03	1.26E-02
Toluene	0.0113	92.141	1.041	0.054	3.99E-03	1.75E-02
Ethylbenzene	0.0022	106.167	0.234	0.012	8.96E-04	3.92E-03
Xylenes	0.0004	106.167	0.042	0.002	1.63E-04	7.13E-04
C8+ Heavies	0.0170	114.231	1.942	0.101	7.45E-03	3.26E-02
Total	100.0003		1918.736			
Total VOC				18.362	1.35	5.92

Gas stream composition obtained from the Inlet - La Jara extended gas analysis dated December 31, 2019.
Component Weights (lb/lb-mole) = (% / 100) * Molecular Weights (lb/lb-mole)
Weight Percent of TOC (%) = 100 x Component Weights (lb/lb-mole) / Total Component Weight (lb/lb-mole)
Uncontrolled Emission Rates (pph) = Total Uncontrolled TOC Emission Rate (pph) x (% / 100)
Uncontrolled Emission Rates (tpy) = Total Uncontrolled TOC Emission Rate (tpy) x (% / 100)

Equipment Leaks Emissions Calculations

Unit Number: F1
Description: Valves, Connectors, Seals & Lines

Number of Compression Units at the Facility: 5
Number of Dehydrators at the Facility: 0

Process Equipment Description	Equipment Count						Instrument Count		
	Valves	Connectors	Pump Seals	Compressor Seals	Pressure Relief Valves	Open-end	Flow	Level	Pressure
Station inlet, meter run to pulsation dampener	17	14	0	0	1	13	3	0	3
Pulsation dampener	12	8	0	0	0	2	0	4	1
Compressor suction header	7	4	0	0	0	3	0	0	1
Suction header feed to instrument gas header	3	1	0	0	0	1	0	0	0
Compressor discharge header and bypass to station discharge	6	5	0	0	0	3	0	1	1
Compressor discharge header and suction header bypass lines	4	2	0	0	0	2	0	0	1
Fuel gas header	2	2	0	0	1	2	0	0	1
Instrument gas header	2	2	0	0	1	2	0	0	0
Station discharge header	9	5	0	0	1	6	0	0	2
Fuel gas recovery header	2	2	0	0	1	2	0	0	0
Fuel gas feed and filter loop	15	9	0	0	0	1	0	4	1
Instrument gas feed and filter loop	9	11	0	0	0	3	0	0	0
Produced water storage tank	1	0	0	0	0	1	0	1	0
ESD panel	12	0	0	0	0	0	0	0	0
Starting gas header	6	2	0	0	1	3	0	0	0
Hot gas header	2	2	0	0	0	2	0	0	0
Volume bottle lop	12	4	0	24	1	2	0	0	1
Components from Compressors	220	295	0	20	30	55	0	20	45
Components from dehydrators	0	0	0	0	0	0	0	0	0
Total	341	368	0	44	37	103	3	30	57
Adjusted Total	504	491	0	44	37	133			

The following additions are included in the Adjusted Total:

1 valve is added for each open end line

2 connectors are added for each flow meter

2 valves, 2 connectors and 1 open end line are added for each level gauge

1 connector is added for each pressure gauge

The component count is based on an evaluation of the Sim Mesa Compressor Station (two stage compression)

Malfunction Emissions Data and Calculations

Unit Number: M1
Description: Malfunctions

Emission Rates

Pollutants	Weight Percents, %	Uncontrolled Emission Rates, tpy
VOC		10.00
2,2,4-Trimethylpentane	6.829E-02	6.83E-03
Benzene	2.129E-01	2.13E-02
Ethylbenzene	6.632E-02	6.63E-03
n-Hexane	1.718E+00	0.172
Toluene	2.956E-01	2.96E-02
Xylene	1.206E-02	1.21E-03

Weight percents calculated from gas composition (see table below)
Uncontrolled Emission Rates (tpy) = VOC Emission Rate (tpy) x (% / 100)

Gas Composition

Components	Mole Percents, %	Molecular Weights, lb/lb-mole	Component Weights, lb/lb-mole	Weight Percent, %
Carbon dioxide	1.6565	44.01		
Hydrogen sulfide	0.0000	34.07		
Nitrogen	1.0688	28.01		
Methane	82.6372	16.04		
Ethane	8.0037	30.07		
Propane	3.8334	44.09	1.6901	4.799E+01
Isobutane	0.6777	58.12	0.3939	1.118E+01
n-Butane	1.1402	58.12	0.6627	1.882E+01
Isopentane	0.3515	72.15	0.2536	7.201E+00
n-Pentane	0.2576	72.15	0.1859	5.277E+00
Cyclopentane	0.0098	70.14	0.0069	1.952E-01
n-Hexane	0.0702	86.17	0.0605	1.718E+00
Cyclohexane	0.0237	84.16	0.0199	5.664E-01
Other hexanes	0.1446	86.18	0.1246	3.538E+00
Heptanes	0.0446	100.20	0.0447	1.269E+00
Methylcyclohexane	0.0379	98.19	0.0372	1.057E+00
2,2,4-Trimethylpentane	0.0024	100.21	0.0024	6.829E-02
Benzene	0.0096	78.11	0.0075	2.129E-01
Toluene	0.0113	92.14	0.0104	2.956E-01
Ethylbenzene	0.0022	106.17	0.0023	6.632E-02
Xylenes	0.0004	106.17	0.0004	1.206E-02
C8+ Heavies	0.0170	110.00	0.0187	5.310E-01
Total	100.0003			
Total VOC			3.5218	

Gas stream composition obtained from the Inlet - La Jara extended gas analysis dated December 31, 2019.
Component Weights (lb/lb-mole) = (% / 100) x Molecular Weights (lb/lb-mole)
Weight Percents (%) = 100 x Component Weights (lb/lb-mole) / Total VOC Weight (lb/lb-mole)

Heater Exhaust Emissions Data and Calculations

Unit Number: 5 - Exempt source demonstration
Description: Fuel Gas Heater (3-phase separator)

Note: Where more than one emissions unit is identified above, this worksheet provides the emission rates and operating parameters for each individual emissions unit.

Fuel Consumption

0.50	MMBtu/hr	Capacity	Mfg. data
555.56	scf/hr	Hourly fuel consumption	MMBtu/hr x 1,000,000 / Btu/scf
4,380.00	MMBtu/yr	Annual fuel consumption	MMBtu/hr x 8,760 hr/yr
4.87	MMscf/yr	Annual fuel consumption	scf/hr x 8,760 hr/yr / 1,000,000
900	Btu/scf	Field gas heating value	Nominal heat content

Steady-State Emission Rates

Pollutant	Uncontrolled, lb/MMscf	pph	tpy
NOX	100	5.56E-02	2.43E-01
CO	84	4.67E-02	2.04E-01
VOC	5.5	3.06E-03	1.34E-02
SO2	0.6	3.33E-04	1.46E-03
PM/TSP	7.60	4.22E-03	1.85E-02
PM10	7.60	4.22E-03	1.85E-02
PM2.5	7.60	4.22E-03	1.85E-02
Lead	5.00E-04	2.78E-07	1.22E-06

Emission factors (lb/MMBtu) taken from AP-42, Tables 1.4-1 & 1.4-2

Annual emissions based on 8,760 hr/yr operation

Exhaust Parameters

600.0	°F	Exhaust temperature	Mfg. data
127.8	acfm	Stack flowrate	Stack velocity * stack area * 60
0.67	ft	Stack diameter	Harvest
6.1	fps	Stack velocity	Estimated
13.0	ft	Stack height	Harvest

Storage Tank Emissions Calculations

Unit Number: T4 - Exempt source demonstration
Description: Produced Water Tank

Note: The data on this worksheet applies to each individual emissions unit identified above.

Throughput

3,360	gallons	Tank capacity	Harvest
12.000	annual turnovers	Turnovers per year	Harvest
40,320	gallons per year (gpy)	Annual liquid throughput	gallon capacity x turnovers/yr
960	barrels per year (bpy)	Annual liquid throughput	barrel capacity x turnovers/yr

Emission Rates

Pollutant	Emission Factor, lb/bbl	Uncontrolled Emission Rate, tpy
VOC	0.262	0.126
Benzene	0.007	3.36E-03
Ethylbenzene	0.0007	3.36E-04
n-Hexane	0.022	1.06E-02
Toluene	0.009	4.32E-03
Xylene	0.006	2.88E-03

VOC, Benzene, and n-Hexane emission factors are from the CDPHE PS Memo 09-02
(Oil & Gas Produced Water Tank Batteries - Regulatory Definitions & Permitting Guidance)
Ethylbenzene, toluene, and xylene emissions factors (Non-Texas) are from the TCEQ
Project 2010-29 (Emission Factor Determination for Produced Water Storage Tanks) report
Emission Rate (tpy) = lb/bbl x bbl/yr / 2,000 lb/ton

Truck Loading Emissions Calculations

Unit Number: L2 - Exempt source demonstration
Description: Truck Loading

Emission Factor

0.6		Saturation factor, S	AP-42, Table 5.2-1 (submerged loading & dedicated service)
7.43	psia	True vapor pressure of liquid, P	TANKS 4.0 output file
66.99	lb/lb-mole	Molecular weight of vapors, M	TANKS 4.0 output file
67.36	°F	Temperature of liquid	TANKS 4.0 output file
527.03	°R	Temperature of liquid, T	°F + 459.67
7.06	$lb/10^3$ gal	Emission factor, L	AP-42, Section 5.2, Equation 1

$$L = 12.46 \frac{SPM}{T}$$

Note: The total control efficiency is equal to the collection efficiency of the system (90 percent for trucks subjected to annual leak checks) times the control efficiency of the control device

Production Rate

8.40	10^3 gal/hr	Maximum hourly production rate	Harvest
40.320	10^3 gal/yr	Maximum annual production rate	Harvest

Steady-State Emission Rates

Pollutant	Uncontrolled Emission Rates, pph	tpy
VOC	59.28	1.42E-01

Uncontrolled Emission Rate (pph) = lb/10^3 gal x 10^3 gal/hr
Uncontrolled Emission Rate (tpy) = lb/10^3 gal x 10^3 gal/yr / 2,000 lb/ton

Pollutants	Percent of VOC, %	Uncontrolled Emission Rates pph	tpy
Benzene	2.67E-02	1.58E-02	3.80E-05
Ethylbenzene	2.67E-03	1.58E-03	3.80E-06
n-Hexane	8.40E-02	4.98E-02	1.19E-04
Toluene	3.44E-02	2.04E-02	4.89E-05
m-Xylene	2.29E-02	1.36E-02	3.26E-05

Wt. Fraction of VOC = Produced Water tank emission rate of pollutant (tpy) / tpy VOC.
Emission rate, pph = Wt. Fraction of VOC x VOC Emission rate (pph)
Emission rate, tpy = Wt. Fraction of VOC x VOC Emission rate (tpy)

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	La Jara T10 (Methanol)
City:	Bloomfield
State:	New Mexico
Company:	Williams Four Corners LLC
Type of Tank:	Vertical Fixed Roof Tank
Description:	21,000 Gallon Methanol Storage Tank

Tank Dimensions

Shell Height (ft):	16.00
Diameter (ft):	15.00
Liquid Height (ft) :	15.00
Avg. Liquid Height (ft):	8.00
Volume (gallons):	19,829.00
Turnovers:	3.00
Net Throughput(gal/yr):	59,487.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	Gray/Light
Shell Condition	Good
Roof Color/Shade:	Gray/Light
Roof Condition:	Good

Roof Characteristics

Type:	Cone
Height (ft)	0.00
Slope (ft/ft) (Cone Roof)	0.06

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig)	0.03

Meterological Data used in Emissions Calculations: Albuquerque, New Mexico (Avg Atmospheric Pressure = 12.15 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

La Jara T10 (Methanol) - Vertical Fixed Roof Tank
Bloomfield, New Mexico

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Methyl alcohol	All	64.94	53.24	76.64	58.39	1.6820	1.1617	2.3895	32.0400			32.04	Option 2: A=7.897, B=1474.08, C=229.13

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

La Jara T10 (Methanol) - Vertical Fixed Roof Tank
Bloomfield, New Mexico

Annual Emission Calcaulations

Standing Losses (lb):	585.3748
Vapor Space Volume (cu ft):	1,441.3283
Vapor Density (lb/cu ft):	0.0096
Vapor Space Expansion Factor:	0.2008
Vented Vapor Saturation Factor:	0.5790
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	1,441.3283
Tank Diameter (ft):	15.0000
Vapor Space Outage (ft):	8.1563
Tank Shell Height (ft):	16.0000
Average Liquid Height (ft):	8.0000
Roof Outage (ft):	0.1563
Roof Outage (Cone Roof)	
Roof Outage (ft):	0.1563
Roof Height (ft):	0.0000
Roof Slope (ft/ft):	0.0625
Shell Radius (ft):	7.5000
Vapor Density	
Vapor Density (lb/cu ft):	0.0096
Vapor Molecular Weight (lb/lb-mole):	32.0400
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	1.6820
Daily Avg. Liquid Surface Temp. (deg. R):	524.6094
Daily Average Ambient Temp. (deg. F):	56.1542
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	518.0642
Tank Paint Solar Absorptance (Shell):	0.5400
Tank Paint Solar Absorptance (Roof):	0.5400
Daily Total Solar Insulation Factor (Btu/sqft day):	1,765.3167
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.2008
Daily Vapor Temperature Range (deg. R):	46.7976
Daily Vapor Pressure Range (psia):	1.2278
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	1.6820
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	1.1617
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	2.3895
Daily Avg. Liquid Surface Temp. (deg R):	524.6094
Daily Min. Liquid Surface Temp. (deg R):	512.9100
Daily Max. Liquid Surface Temp. (deg R):	536.3088
Daily Ambient Temp. Range (deg. R):	27.9250
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.5790
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):	1.6820

Vapor Space Outage (ft):	8.1563
Working Losses (lb):	76.3272
Vapor Molecular Weight (lb/lb-mole):	32.0400
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	1.6820
Annual Net Throughput (gal/yr.):	59,487.0000
Annual Turnovers:	3.0000
Turnover Factor:	1.0000
Maximum Liquid Volume (gal):	19,829.0000
Maximum Liquid Height (ft):	15.0000
Tank Diameter (ft):	15.0000
Working Loss Product Factor:	1.0000
Total Losses (lb):	661.7019

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

La Jara T10 (Methanol) - Vertical Fixed Roof Tank
Bloomfield, New Mexico

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Methyl alcohol	76.33	585.37	661.70

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	La Jara T11 (Corrosion Inhibitor)
City:	Bloomfield
State:	New Mexico
Company:	Harvest Four Corners, LLC
Type of Tank:	Horizontal Tank
Description:	750 gallon Corrosion Inhibitor tank

Tank Dimensions

Shell Length (ft):		5.00
Diameter (ft):		5.00
Volume (gallons):		750.00
Turnovers:		12.00
Net Throughput(gal/yr):		9,000.00
Is Tank Heated (y/n):	N	
Is Tank Underground (y/n):	N	

Paint Characteristics

Shell Color/Shade:	Gray/Light
Shell Condition	Good

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig)	0.03

Meterological Data used in Emissions Calculations: Albuquerque, New Mexico (Avg Atmospheric Pressure = 12.15 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

La Jara T11 (Corrosion Inhibitor) - Horizontal Tank
Bloomfield, New Mexico

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Corrosion Inhibitor	All	64.94	53.24	76.64	58.39	1.2094	0.8499	1.6791	41.5452			68.87	
1,2,3-Trimethylbenzene						0.0180	0.0111	0.0284	120.2000	0.0450	0.0011	120.20	Option 2: A=7.04082, B=1593.958, C=207.078
1,2,4-Trimethylbenzene						0.0248	0.0155	0.0388	120.1900	0.2700	0.0092	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
1,3,5-Trimethylbenzene						0.0266	0.0166	0.0414	120.1900	0.0900	0.0033	120.19	Option 2: A=7.07436, B=1573.622, C=208.564
1-Dodecanethiol						0.0000	0.0000	0.0000	202.4000	0.0100	0.0000	202.40	Option 2: A=7.0244, B=1817.8, C=164.1
Jet naphtha (JP-4)						1.4482	1.0972	1.7992	80.0000	0.2700	0.3573	120.00	Option 1: VP60 = 1.3 VP70 = 1.6
Methyl alcohol						1.6820	1.1617	2.3895	32.0400	0.2700	0.6225	32.04	Option 2: A=7.897, B=1474.08, C=229.13
Xylene (-m)						0.1073	0.0710	0.1586	106.1700	0.0450	0.0066	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

La Jara T11 (Corrosion Inhibitor) - Horizontal Tank
Bloomfield, New Mexico

Annual Emission Calcaulations

Standing Losses (lb):	28.0051
Vapor Space Volume (cu ft):	62.5317
Vapor Density (lb/cu ft):	0.0089
Vapor Space Expansion Factor:	0.1595
Vented Vapor Saturation Factor:	0.8619
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	62.5317
Tank Diameter (ft):	5.0000
Effective Diameter (ft):	5.6433
Vapor Space Outage (ft):	2.5000
Tank Shell Length (ft):	5.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0089
Vapor Molecular Weight (lb/lb-mole):	41.5452
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	1.2094
Daily Avg. Liquid Surface Temp. (deg. R):	524.6094
Daily Average Ambient Temp. (deg. F):	56.1542
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	518.0642
Tank Paint Solar Absorptance (Shell):	0.5400
Daily Total Solar Insulation Factor (Btu/sqft day):	1,765.3167
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.1595
Daily Vapor Temperature Range (deg. R):	46.7976
Daily Vapor Pressure Range (psia):	0.8292
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	1.2094
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.8499
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	1.6791
Daily Avg. Liquid Surface Temp. (deg R):	524.6094
Daily Min. Liquid Surface Temp. (deg R):	512.9100
Daily Max. Liquid Surface Temp. (deg R):	536.3088
Daily Ambient Temp. Range (deg. R):	27.9250
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.8619
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):	1.2094
Vapor Space Outage (ft):	2.5000
Working Losses (lb):	10.7666
Vapor Molecular Weight (lb/lb-mole):	41.5452
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	1.2094
Annual Net Throughput (gal/yr.):	9,000.0000
Annual Turnovers:	12.0000
Turnover Factor:	1.0000

Tank Diameter (ft):	5.0000
Working Loss Product Factor:	1.0000

Total Losses (lb):	38.7717

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

La Jara T11 (Corrosion Inhibitor) - Horizontal Tank
Bloomfield, New Mexico

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Corrosion Inhibitor	10.77	28.01	38.77
1,2,3-Trimethylbenzene	0.01	0.03	0.04
1,2,4-Trimethylbenzene	0.10	0.26	0.36
1,3,5-Trimethylbenzene	0.04	0.09	0.13
1-Dodecanethiol	0.00	0.00	0.00
Jet naphtha (JP-4)	3.85	10.01	13.85
Methyl alcohol	6.70	17.43	24.13
Xylene (-m)	0.07	0.19	0.26

Extended Gas Analysis

Gas Composition

Components	Mole Percents, %	Molecular Weights, lb/lb-mole	Component Weights, lb/lb-mole	Weight Percent, %	Emission Factors, lb/scf
Carbon dioxide	1.6565	44.01	0.7290	3.6069	1.922E-03
Hydrogen sulfide	0.0000	34.07	0.0000	0.0000	0.000E+00
Nitrogen	1.0688	28.01	0.2994	1.4812	7.891E-04
Methane	82.6372	16.04	13.2550	65.5802	3.494E-02
Ethane	8.0037	30.07	2.4067	11.9074	6.343E-03
Propane	3.8334	44.09	1.6901	8.3621	4.455E-03
Isobutane	0.6777	58.12	0.3939	1.9487	1.038E-03
n-Butane	1.1402	58.12	0.6627	3.2787	1.747E-03
Isopentane	0.3515	72.15	0.2536	1.2547	6.684E-04
n-Pentane	0.2576	72.15	0.1859	0.9195	4.899E-04
Cyclopentane	0.0098	70.14	0.0069	0.0340	1.812E-05
n-Hexane	0.0702	86.17	0.0605	0.2993	1.594E-04
Cyclohexane	0.0237	84.16	0.0199	0.0987	5.257E-05
Other hexanes	0.1446	86.18	0.1246	0.6165	3.285E-04
Heptanes	0.0446	100.20	0.0447	0.2211	1.178E-04
Methylcyclohexane	0.0379	98.19	0.0372	0.1841	9.809E-05
2,2,4-Trimethylpentane	0.0024	100.21	0.0024	0.0119	6.339E-06
Benzene	0.0096	78.11	0.0075	0.0371	1.976E-05
Toluene	0.0113	92.14	0.0104	0.0515	2.744E-05
Ethylbenzene	0.0022	106.17	0.0023	0.0116	6.156E-06
Xylenes	0.0004	106.17	0.0004	0.0021	1.119E-06
C8+ Heavies	0.0170	110.00	0.0187	0.0925	4.929E-05
Total Gas	100.0003		20.2119		5.327E-02
Total VOC			3.5218		9.283E-03

Gas stream composition obtained from the Inlet - La Jara extended gas analysis dated December 31, 2019.

Emission Factors (lb/scf) = (% / 100) x lb/lb-mole / 379.4 scf/lb-mole

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)

Greenhouse Gas (GHG) Emissions

Greenhouse gas (GHG) emissions are provided. Carbon dioxide (CO_2), methane (CH_4) emissions, nitrous oxide (N_2O) (combustion sources only), and total GHG are reported in tons per year (tpy). Carbon dioxide equivalent (CO_2e) emissions (including CO_2, N_2O and CH_4) are reported in metric tonnes per year. The CO_2e is calculated by summing the estimated CO_2 emissions with the CH_4 emissions (adjusted for the Global Warming Potential (GWP) of the CH_4) and the N_2O emissions (adjusted for the GWP of the N_2O). The GWPs are from Title 40, Part 98 (40 CFR 98), *Mandatory Greenhouse Gas Reporting*, Table A-1.

The portion of 40 CFR 98, Table A-1 that includes the GWPs for CH_4 and N_2O is included in Section 7. 40 CFR 98, Subpart A (including Table A-1) is available for download in its entirety through the U.S. Government Publications Office (GPO) website at http://ecfr.gpoaccess.gov/ under the "Code of Federal Regulations" link.

Combustion Equipment GHG. GHG emissions, including carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O) exhaust emissions from the combustion equipment (including the gas turbines, the reciprocating internal combustion generator engine, and the fuel gas heater) are calculated from emission factors from 40 CFR 98, Part C, Tables C-1 & C-2, and the equipment higher heating value (HHV) design heat rate.

Emission factors and methodologies from 40 CFR 98, Table C-1 and C-2 are included in Section 7. 40 CFR 98, Subpart C (including Tables C-1 and C-2) is available for download in its entirety through the U.S. Government Publications Office (GPO) website at http://ecfr.gpoaccess.gov/ under the "Code of Federal Regulations" link.

Non-Combustion Equipment GHG (General). The non-combustion GHG emissions from the facility are based on 40 CFR 98, Subpart W, *Petroleum and Natural Gas Systems*, or an appropriate method published in the American Petroleum Institute's 2009 *Compendium of Greenhouse Gas Emission Estimates Methodologies for the Oil and Gas Industry* (API Compendium). The emission calculation methods is noted in the calculations spreadsheets.

40 CFR 98, Subpart W is published and available for download in its entirety through the U.S. Government Publications Office (GPO) website at http://ecfr.gpoaccess.gov/ under the "Code of Federal Regulations" link. The API Compendium in its entirety is available at http://www.api.org/environment-health-and-safety/climate-change/whats-new/compendium-ghg-methodologies-oil-and-gas-industry . Excerpts of the cited 40 CFR 98 and API Compendium materials are provided in Section 7.

SSM Compressor Blowdown GHG. Compressor blowdown emissions (unit SSM), including emissions from SSM and compressor venting and associated piping, are calculated from the estimated total annual gas losses (scf/yr) and the molar fraction of CO_2 and CH_4 in the natural gas extended

analysis. The SSM emissions are estimated from the annual blowdown volume of gas. The emission calculations are provided in this section. The extended gas analysis used in the emission estimates is in Section 7.

Malfunction Emissions GHG. GHG emissions from the malfunction VOC emissions (Unit M1) are calculated based on the estimated total volume of annual gas (scf/yr) associated with the specified tpy of VOC emissions and the molar fractions of CO_2 and CH_4 in the natural gas extended analysis.

Centrifugal Compressor Venting Emissions. Annual GHG emissions from centrifugal compressor vented emissions, including compressor blowdown leakage, oil degassing vents and isolation valve leakage, are estimated from the number of compressors; the estimated compressor operating times; the CO_2 and CH_4 molar composition of the gas stream; and the density of the GHG gases according to appropriate equations from 40 CFR 98, Subpart W, equations W-22 and W-36, and paragraph 98.233(v).

Isolation valve leakage occurs when the compressors are not in operation, i.e., when the compressors operate zero hours. The GHG emissions from isolation valve leakage are less than the combined blowdown valve leakage and oil degassing vent emissions that occur when compressor(s) are in operation. Therefore, the PTE is calculated assuming 87600 hours per year of compressor operation (corresponding with zero hours of isolation valve leakage per year).

Equipment Leaks Emissions. GHG emissions from facility-wide equipment leaks (Unit F-1) are based on the estimated total annual gas losses (scf/yr) associated with the estimated number of components, the corresponding emission factors from the EPA's 1995 *Protocol for Equipment Leak Emission Estimates*, and the molar fraction of CO_2 and CH_4 contained in the natural gas extended analysis.

Natural Gas Driven Pneumatic Device Venting Emissions and Natural Gas Driven Pneumatic Pump Venting Emissions. Gas-driven pneumatic device and pneumatic pump emissions are calculated from the facility gas stream composition for CO_2 and CH_4, the estimated number of devices, and the appropriate emission factors from 40 CFR 98, Subpart W, Table W-1A (Western U.S. - Gas Service).

Storage Tank and Truck Loading GHG. CO_2 and CH_4 tpy emissions from the facility-wide condensate flashed gas emissions (inlet separator, condensate tanks and condensate truck loading) are calculated using the ProMax flash gas emissions output for the individual speciated CO_2 and CH_4 mass flow fractions under the '/Tank_Flash_Emissions (Material Stream)' (vapor stream, Vap), multiplied by the total gas mass flow (lb/hr). The tons per year CO_2 and CH_4 are calculated from the individual calculated CO_2 and CH_4 lb/hr values x 8760 hr/yr x 1 ton/2000 lbs.

The ProMax calculations only apply to the flashed emissions of CO_2 and CH_4. The stabilized (post-flashed) condensate liquid transferred during truck loading operations (unit L1) does not contain appreciable amounts of any gases, including GHG.

GHG emissions from the produced water, lube oil, used lube oil, methanol, corrosion inhibitor and transmission fluid storage tanks are considered zero based on that the stored contents are either non-flashing liquids or are stabilized (post-flashed) liquid. Similarly, any liquids transferred during truck loading would not contain appreciable amounts of any gases, including GHG.

Green House Gas Emissions Data and Calculations

Sources	Facility Total Emissions				
	CO2, tpy	CH4, tpy	N2O, tpy	GHG, tpy	CO2e, tpy
Engine & Turbine Exhaust	101,782.18	1.92	0.19	101,784.29	101887.30
SSM Blowdowns	6.7054	121.9169	--	128.62	3054.63
Centrifugal Compressor Venting	38.43	699.85	--	738.29	17534.76
Heater & Boiler Exhaust	284.05	5.35E-03	5.35E-04	284.05	284.34
Pig Launchers & Receivers	2.2578	41.0504	--	43.31	1028.52
Equipment Leaks	0.68	12.35	--	13.03	309.37
Natural Gas Pneumatic Device Venting	1.23	22.43	--	23.66	561.92
Natural Gas Driven Pneumatic Pump Venting	0.11	2.03	--	2.15	50.95
Malfunctions	2.07	37.64	--	39.71	943.00
Separators & Storage Tanks (Flash Emissions)	0.65	2.68	--	3.33	67.65
Total	102,118.37	941.87	1.92E-01	103,060.43	125,722.43

Engine & Turbine Exhaust Emissions

Unit Numbers	Description	Emission Factors			Emission Rates		
		CO2, kg/MMBtu	CH4, kg/MMBtu	N2O, kg/MMBtu	CO2, tpy	CH4, tpy	N2O, tpy
1 or 8 (worst case)	Solar Centaur T4002 Turbine	53.06	1.00E-03	1.00E-04	20,002.65	3.77E-01	3.77E-02
2 or 9 (worst case)	Solar Centaur T4002 Turbine	53.06	1.00E-03	1.00E-04	20,002.65	3.77E-01	3.77E-02
3	Solar Centaur 40-4702 Turbine	53.06	1.00E-03	1.00E-04	20,417.36	3.85E-01	3.85E-02
6	Solar Centaur 40-4702S Turbine	53.06	1.00E-03	1.00E-04	20,627.56	3.89E-01	3.89E-02
7	Solar Centaur 40-4702S Turbine	53.06	1.00E-03	1.00E-04	20,627.56	3.89E-01	3.89E-02
4	Waukesha F3521G RICE	53.06	1.00E-03	1.00E-04	104.41	1.97E-03	1.97E-04
	Total				101,782.18	1.92	0.19

The emissions factors are taken from 40 CFR 98, Subpart C, Tables C-1 & C-2

Emission Rates (tpy) = kg/MMBtu x 2.2 lb/kg x MMBtu/yr / 2,000 lb/ton 101,782.18

Unit Numbers	Description	Fuel Types	Operating Times, hr/yr	LHV Design Heat Rates, MMBtu/hr	HHV	
					Design Heat Rates, MMBtu/hr	Fuel Usages, MMBtu/yr
1 or 8 (worst case)	Solar Centaur T4002 Turbine	Nat. Gas	8,760	35.21	39.12	342,711
2 or 9 (worst case)	Solar Centaur T4002 Turbine	Nat. Gas	8,760	35.21	39.12	342,711
3	Solar Centaur 40-4702 Turbine	Nat. Gas	8,760	35.94	39.93	349,816
6	Solar Centaur 40-4702S Turbine	Nat. Gas	8,760	36.31	40.34	353,417
7	Solar Centaur 40-4702S Turbine	Nat. Gas	8,760	36.31	40.34	353,417
4	Waukesha F3521G RICE	Nat. Gas	500	3.22	3.58	1,789

The fuel types and operating times are provided by Harvest

The LHV design heat rates are taken from manufacturers data

HHV Design Heat Rates (MMBtu/hr) = LHV Design Heat Rates (MMBtu/hr) / 0.9 LHV/HHV

HHV Fuel Usages (MMBtu/yr) = HHV Design Heat Rates (MMBtu/hr) x hr/yr

SSM Blowdown Emissions

Unit Numbers	Description	Total Gas Losses, scf/yr	CO2 Emission Factors, lb/scf	CH4 Emission Factors, lb/scf	Emission Rates	
					CO2, tpy	CH4, tpy
SSM	SSM Blowdowns	6,979,291	0.0019	0.0349	6.71	121.92

The annual blowdown volumes are calculated from data provided by Harvest

The CO2 and CH4 emission factors are calculated from the facility extended gas analysis

Emission Rates (tpy) = scf/yr x lb/scf / 2,000 lb/ton

Green House Gas Emissions Data and Calculations

Centrifugal Compressor Venting Emissions

Unit Numbers	Description	Emission Rates	
		CO2, tpy	CH4, tpy
NA	Blowdown Valve Leakage	7.04	128.23
NA	Oil Degassing Vents	31.39	571.62
NA	Isolation Valve Leakage	0.00	0.00
	Total	38.43	699.85

Operating mode - includes blowdown valve leakage (wet and dry seal) and the oil degassing vents (wet seal)
Non-operating depressurized mode - includes isolation valve leakage (wet & dry seal) through open blowdown vents (without blind flanges)
A combination of equations W-22 & W-36 (Subpart W) is used to calculate centrifugal compressor emissions
As the NMED requires CO2 & CH4 emissions rather than CO2e emissions, it is not necessary to include the global warming potential from equation W-36
CO2 Emission Rates (tpy) = # x scf/hr x hr/yr x (CO2 Mole Percent (%) / 100) x CO2 Density (kg/scf) x (2,204.6 lb/tonne / 2,000 lb/ton) / 1,000 kg/tonne
CH4 Emission Rates (tpy) = # x scf/hr x hr/yr x (CH4 Mole Percent (%) / 100) x CH4 Density (kg/scf) x (2,204.6 lb/tonne / 2,000 lb/ton) / 1,000 kg/tonne

Unit Numbers	Description	Number of Compressors #	Gas Emissions, scf/hr	Operating Times, hr/yr	CO2 Mole Percents, %	CH4 Mole Percents, %	CO2 Density, kg/scf	CH4 Density, kg/scf
NA	Blowdown Valve Leakage	5	167.4	8,760	1.66	82.64	0.0526	0.0192
NA	Oil Degassing Vents	5	746.2	8,760	1.66	82.64	0.0526	0.0192
NA	Isolation Valve Leakage	5	10.8	0	1.66	82.64	0.0526	0.0192

The number of compressors is provided by Harvest
Emission factors are the three year rolling average (2012-2014) of all measurements in the Williams Field Services, LLC compressor fleet located at natural gas processing plants
The operating times (the average operating times for all station compressors combined) are provided by Harvest
The facility CO2 and CH4 contents are taken from the facility extended gas analysis
The CO2 & CH4 densities (kg/scf) are taken from Subpart W, Paragraph 98.233(v)

Heater & Boiler Exhaust Emissions

Unit Numbers	Description	Emission Factors			Emission Rates		
		CO2, kg/MMBtu	CH4, kg/MMBtu	N2O, kg/MMBtu	CO2, tpy	CH4, tpy	N2O, tpy
5	Heater (insignificant)	53.06	1.00E-03	1.00E-04	284.05	5.35E-03	5.35E-04
	Total				284.05	5.35E-03	5.35E-04

The emissions factors are taken from 40 CFR 98, Subpart C, Tables C-1 & C-2
Emission Rates (tpy) = kg/MMBtu x 2.2 lb/kg x MMBtu/yr / 2,000 lb/ton

Unit Numbers	Description	Fuel Types	Operating Times, hr/yr	LHV Design Heat Rates, MMBtu/hr	HHV	
					Design Heat Rates, MMBtu/hr	Fuel Usages, MMBtu/yr
5	Heater (insignificant)	Nat. Gas	8,760	0.50	0.556	4,867

The fuel type and operating time are provided by Harvest
The LHV design heat rates are taken from manufacturers data
HHV Design Heat Rates (MMBtu/hr) = LHV Design Heat Rate (MMBtu/hr) / 0.9 LHV/HHV
HHV Fuel Usages (MMBtu/yr) = HHV Design Heat Rate (MMBtu/hr) x hr/yr

Green House Gas Emissions Data and Calculations

Pig Launcher & Receiver Emissions

Unit Numbers	Description	Total Gas Losses, scf/yr	CO2 Emission Factors, lb/scf	CH4 Emission Factors, lb/scf	Emission Rates	
					CO2, tpy	CH4, tpy
PL	Pig Launcher	2,159,245	0.0019	0.0349	2.07	37.72
PR	Pig Receiver	190,740	0.0019	0.0349	0.18	3.33
	Total				2.2578	41.0504

The annual blowdown volumes are calculated from data provided by Harvest
The CO2 and CH4 emission factors are calculated from the facility extended gas analysis
Emission Rates (tpy) = scf/yr x lb/scf / 2,000 lb/ton

Equipment Leaks Emissions

Unit Numbers	Description	Emission Rates	
		CO2, tpy	CH4, tpy
NA	Valves	0.5	9.3
NA	Connectors	0.1	1.3
NA	Open-Ended Lines	0.0	0.6
NA	Pressure Relief Valves	0.1	1.1
	Total	0.68	12.35

A combination of equations W-31 & W-36 (Subpart W) is used to calculate uncombusted CO2 & CH4 emissions
As the NMED requires CO2 & CH4 emissions rather than CO2e emissions, it is not necessary to include the global warming potential from equation W-36
CO2 Emission Rate (tpy) = # x scf/hr/component x (CO2 Content (mole %) / 100) x hr/yr x CO2 Density (kg/scf) x (2,204.6 lb/tonne / 2,000 lb/ton) / 1,000 kg/tonne
CH4 Emission Rate (tpy) = # x scf/hr/component x (CH4 Content (mole %) / 100) x hr/yr x CH4 Density (kg/scf) x (2,204.6 lb/tonne / 2,000 lb/ton) / 1,000 kg/tonne

Unit Numbers	Description	Number of Components, #	Emission Factors, scf/hr /component	CO2 Contents, mole %	CH4 Contents, mole %	Operating Times, hr/yr	CO2 Density, kg/scf	CH4 Density, kg/scf
NA	Valves	504	0.121	1.66	82.64	8,760	0.0526	0.0192
NA	Connectors	491	0.017	1.66	82.64	8,760	0.0526	0.0192
NA	Open-Ended Lines	133	0.031	1.66	82.64	8,760	0.0526	0.0192
NA	Pressure Relief Valves	37	0.193	1.66	82.64	8,760	0.0526	0.0192

The number of sources are calculated based on the number of compressors and dehydrators at the station (see criteria pollutant and HAP equipment leaks calculations)
The emission factors are taken from Subpart W, Table W-1A (Western U.S. - Gas Service)
The facility CO2 and CH4 contents are taken from the facility extended gas analysis
The operating times are provided by Harvest (default is the entire year)
The CO2 & CH4 densities are taken from Subpart W, Paragraph 98.233(v)

Green House Gas Emissions Data and Calculations

Natural Gas Pneumatic Device Venting Emissions

Unit Numbers	Description	Number of Devices, #	Emission Factors, scf/hr/device	Operating Times, hr/yr	Emission Rates	
					CO2, tpy	CH4, tpy
NA	Continuous High Bleed Pneumatic Devices	1	37.3	8,760	0.31	5.70
NA	Intermittent Bleed Pneumatic Devices	8	13.5	8,760	0.91	16.51
NA	Continuous Low Bleed Pneumatic Devices	1	1.39	8,760	0.01	0.21
	Total				1.23	22.43

The number of devices and operating times are provided by Harvest
The emission factors are taken from Subpart W, Table W-1A (Western U.S. - Gas Service)
Equation W-1 (Subpart W) is used to calculate CO2 & CH4 emissions
As the NMED requires CO2 & CH4 emissions in addition to CO2e emissions, it is necessary to divide by the global warming potentials
CO2 Emission Rates (tpy) = # x scf/hr/device x (CO2 Content (mole %) / 100) x CO2 Conversion Factors (tonne CO2e/scf) x hr/yr
x (2,204.6 lb/tonne / 2,000 lb/ton) / CO2 Global Warming Potentials (tonne CO2e/tonne CO2)
CH4 Emission Rates (tpy) = # x scf/hr/device x (CH4 Contents (mole %) / 100) x CH4 Conversion Factors (tonne CO2e/scf) x hr/yr
x (2,204.6 lb/tonne / 2,000 lb/ton) / CH4 Global Warming Potentials (tonne CO2e/tonne CH4)

Unit Numbers	Description	CO2 Contents, mole %	CH4 Contents, mole %	CO2 Conversion Factors, tonne CO2e /scf	CH4 Conversion Factors, tonne CO2e /scf	CO2 Global Warming Potentials, tonne CO2e /tonne CO2	CH4 Global Warming Potentials, tonne CO2e /tonne CH4
NA	Continuous High Bleed Pneumatic Devices	1.66	82.64	5.262E-05	4.790E-04	1	25
NA	Continuous Low Bleed Pneumatic Devices	1.66	82.64	5.262E-05	4.790E-04	1	25
NA	Intermittent Bleed Pneumatic Devices	1.66	82.64	5.262E-05	4.790E-04	1	25

The facility CO2 and CH4 contents are taken from the facility extended gas analysis
The conversion factors are taken from Subpart W, Paragraph 98.233(a)
The global warming potentials are taken from 40 CFR Part 98, Table A-1

Natural Gas Driven Pneumatic Pump Venting Emissions

Emission Rates

Unit Number	Description	Number of Pumps, #	Emission Factor, scf/hr/pump	Operating Time, hr/yr	Emission Rates	
					CO2, tpy	CH4, tpy
NA	Pneumatic Pump Venting	1	13.3	8,760	0.11	2.03

The number of pumps is provided by Harvest
The emission factor is taken from Subpart W, Table W-1A (Western U.S. - Gas Service)
The operating time is provided by Harvest (default is the entire year)
Equation W-2 (Subpart W) is used to calculate CO2 & CH4 emissions
As the NMED requires CO2 & CH4 emissions in addition to CO2e emissions, it is necessary to divide by the global warming potentials
CO2 Emission Rate (tpy) = # x scf/hr/pump x (CO2 Content (mole %) / 100) x CO2 Conversion Factor (tonne CO2e/scf) x hr/yr
x (2,204.6 lb/tonne / 2,000 lb/ton) / CO2 Global Warming Potentials (tonne CO2e/tonne CO2)
CH4 Emission Rate (tpy) = # x scf/hr/pump x (CH4 Content (mole %) / 100) x CH4 Conversion Factor (tonne CO2e/scf) x hr/yr
x (2,204.6 lb/tonne / 2,000 lb/ton) / CH4 Global Warming Potentials (tonne CO2e/tonne CH4)

Unit Number	Description	CO2 Content, mole %	CH4 Content, mole %	CO2 Conversion Factor, tonne CO2e /scf	CH4 Conversion Factor, tonne CO2e /scf	CO2 Global Warming Potential, tonne CO2e /tonne CO2	CH4 Global Warming Potential, tonne CO2e /tonne CH4
NA	Pneumatic Pump Venting	1.66	82.64	5.262E-05	4.790E-04	1	25

The facility CO2 and CH4 contents are taken from the facility extended gas analysis
The conversion factors are taken from Subpart W, Paragraph 98.233(a)
The operating time is provided by Harvest (the default is the entire year)
The global warming potentials are taken from 40 CFR Part 98, Table A-1

Green House Gas Emissions Data and Calculations

Malfunction Emissions

Unit Number	Description	Total Component Weight, lb/lb-mole	VOC Component Weight, lb/lb-mole	CO2 Weight % of Total, %	CH4 Weight % of Total, %	Emission Rates		
						VOC, tpy	CO2, tpy	CH4, tpy
M1	Malfunctions	20.21	3.52	3.61	65.58	10.00	2.07	37.64

The total & VOC component weights and CO2 & CH4 weight % of totals are calculated from the facility extended gas analysis
The VOC emission rate is estimated (see calculations workbook)
CO2 Emission Rate (tpy) = VOC Emission Rate (tpy) x (Total Component Weight (lb/lb-mole) / VOC Component Weight (lb-lb-mole)) x (CO2 Weight % of Total (%) / 100)
CH4 Emission Rate (tpy) = VOC Emission Rate (tpy) x (Total Component Weight (lb/lb-mole) / VOC Component Weight (lb-lb-mole)) x (CH4 Weight % of Total (%) / 100)

Separators & Storage Tanks (Flash Emissions)

Unit Number	Description	Emission Rates		Operating Time, hr/yr	Emission Rates	
		CO2, pph	CH4, pph		CO2, tpy	CH4, tpy
T1 to T3, L1, 18	Separator, Condensate Tanks, Loading	--	--	--	0.65	2.68
	Total				0.6487	2.6800

Emission rates (tpy) - ProMax '/Tank_Flash_Emissions (Material Stream)' vapor mass fraction of [GHG] x total gas lb/hr x 8760/2000.
The operating times are provided by Harvest
Emission Rate (tpy) = Emission Rate (pph) x Operating Time (hr/yr) / 2,000 lb/ton

Gas Stream Composition

Components	Mole Percents, %	Molecular Weights, lb/lb-mole	Component Weights, lb/lb-mole	Weight Percent of Total, %	Emission Factors, lb/scf
Carbon Dioxide	1.6565	44.01	0.73	3.6069	0.0019
Hydrogen Sulfide	0.0000	34.07	0.00	0.0000	0.0000
Nitrogen	1.0688	28.01	0.30	1.4812	0.0008
Methane	82.6372	16.04	13.26	65.5802	0.0349
Ethane	8.0037	30.07	2.41	11.9074	0.0063
Propane	3.8334	44.09	1.69	8.3621	0.0045
IsoButane	0.6777	58.12	0.39	1.9487	0.0010
Normal Butane	1.1402	58.12	0.66	3.2787	0.0017
IsoPentane	0.3515	72.15	0.25	1.2547	0.0007
Normal Pentane	0.2576	72.15	0.19	0.9195	0.0005
Cyclopentane	0.0098	70.14	0.01	0.0340	0.0000
n-Hexane	0.0702	86.17	0.06	0.2993	0.0002
Cyclohexane	0.0237	84.16	0.02	0.0987	0.0001
Other Hexanes	0.1446	86.18	0.12	0.6165	0.0003
Heptanes	0.0446	100.20	0.04	0.2211	0.0001
Methylcyclohexane	0.0379	98.19	0.04	0.1841	0.0001
2,2,4-Trimethylpentane	0.0024	100.21	0.00	0.0119	0.0000
Benzene	0.0096	78.11	0.01	0.0371	0.0000
Toluene	0.0113	92.14	0.01	0.0515	0.0000
Ethylbenzene	0.0022	106.17	0.00	0.0116	0.0000
Xylenes	0.0004	106.17	0.00	0.0021	0.0000
C8+ heavies	0.0170	110.00	0.02	0.0925	0.0000
Total	100.0003		20.21	100.0000	0.0533
VOC			3.52	--	0.0093

Gas stream composition obtained from the Inlet - La Jara extended gas analysis dated December 31, 2019.
Component Weights (lb/lb-mole) = [Mole Percents (%) / 100] x Molecular Weights (lb/lb-mole)
Weight Percent of Total (%) = 100 x Component Weights (lb/lb-mole) / Total Component Weight (lb/lb-mole)
Emission Factors (lb/scf) = [Mole Percents (%) / 100] x Molecular Weights (lb/lb-mole) / 379.4 scf/lb-mole

Section 7

Information Used To Determine Emissions

Information Used to Determine Emissions shall include the following:

- [X] 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.
- [X] 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.
- [X] If an EPA document or other material is referenced, include a complete copy.
- [X] Fuel specifications sheet.
- [X] 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.

Please see the following pages.

Solar Turbines
A Caterpillar Company

PREDICTED EMISSION PERFORMANCE

Customer: **Harvest Midstream**	Engine Model: **CENTAUR 40-4700S CS/MD 59F MATCH**
Job ID: **La Jara**	
Inquiry Number:	Fuel Type: **SD NATURAL GAS** / Water Injection: **NO**
Run By: **Jose Guillen** / Date Run: **26-Nov-19**	Engine Emissions Data: **REV. 0.1**

	NOx EMISSIONS	CO EMISSIONS	UHC EMISSIONS
1 — 3795 HP, 100.0% Load, Elev. 6325 ft, Rel. Humidity 50.0%, Temperature 32.0 Deg. F			
PPMvd at 15% O2	25.00	50.00	25.00
ton/yr	15.43	18.79	5.38
lbm/MMBtu (Fuel LHV)	0.100	0.122	0.035
lbm/(MW-hr)	1.24	1.52	0.43
(gas turbine shaft pwr) lbm/hr	3.52	4.29	1.23
2 — 3678 HP, 100.0% Load, Elev. 6325 ft, Rel. Humidity 50.0%, Temperature 50.0 Deg. F			
PPMvd at 15% O2	25.00	50.00	25.00
ton/yr	14.95	18.21	5.21
lbm/MMBtu (Fuel LHV)	0.100	0.122	0.035
lbm/(MW-hr)	1.24	1.52	0.43
(gas turbine shaft pwr) lbm/hr	3.41	4.16	1.19
3 — 3368 HP, 100.0% Load, Elev. 6325 ft, Rel. Humidity 50.0%, Temperature 70.0 Deg. F			
PPMvd at 15% O2	25.00	50.00	25.00
ton/yr	13.86	16.88	4.83
lbm/MMBtu (Fuel LHV)	0.099	0.121	0.035
lbm/(MW-hr)	1.26	1.53	0.44
(gas turbine shaft pwr) lbm/hr	3.16	3.85	1.10

Notes

1. For short-term emission limits such as lbs/hr., Solar recommends using "worst c conditions specific to the application and the site conditions. Worst case for ecessarily the same for another.
2. Solar's typical SoLoNOx warranty, for ppm values, is available for greater than and between 50% and 100% load for gas fuel, and between 65% and 100% load for r the Centaur 40). An emission warranty for non-SoLoNOx equipment is available F or -20 deg F and between
3. Fuel must meet Solar standard fuel specification ES 9-98. Emissions are based composition, or, San Diego natural gas or equivalent.
4. If needed, Solar can provide Product Information Letters to address turbine ope warranty ranges, as well as non-warranted emissions of SO2, PM10/2.5, VOC, and
5. Solar can provide factory testing in San Diego to ensure the actual unit(s) mee the tolerances quoted. Pricing and schedule impact will be provided upon reque
6. Any emissions warranty is applicable only for steady-state conditions and does shut-down, malfunction, or transient event.

Solar Turbines
A Caterpillar Company

PREDICTED EMISSION PERFORMANCE

Customer: **Harvest Midstream**	Engine Model: **CENTAUR 40-4700S CS/MD 59F MATCH**
Job ID: **La Jara**	
Inquiry Number:	Fuel Type: **SD NATURAL GAS** — Water Injection: **NO**
Run By: **Jose Guillen** — Date Run: **26-Nov-19**	Engine Emissions Data: **REV. 0.1**

4	2939 HP	100.0% Load	Elev. 6325 ft	Rel. Humidity 50.0%	Temperature 90.0 Deg. F

	NOx EMISSIONS	CO EMISSIONS	UHC EMISSIONS
PPMvd at 15% O2	25.00	50.00	25.00
ton/yr	12.56	15.29	4.38
lbm/MMBtu (Fuel LHV)	0.098	0.120	0.034
lbm/(MW-hr)	1.31	1.59	0.46
(gas turbine shaft pwr) lbm/hr	2.87	3.49	1.00

Notes

1. For short-term emission limits such as lbs/hr., Solar recommends using "worst c conditions specific to the application and the site conditions. Worst case for ecessarily the same for another.
2. Solar's typical SoLoNOx warranty, for ppm values, is available for greater than and between 50% and 100% load for gas fuel, and between 65% and 100% load for r the Centaur 40). An emission warranty for non-SoLoNOx equipment is available F or -20 deg F and between
3. Fuel must meet Solar standard fuel specification ES 9-98. Emissions are based composition, or, San Diego natural gas or equivalent.
4. If needed, Solar can provide Product Information Letters to address turbine ope warranty ranges, as well as non-warranted emissions of SO2, PM10/2.5, VOC, and
5. Solar can provide factory testing in San Diego to ensure the actual unit(s) mee the tolerances quoted. Pricing and schedule impact will be provided upon reque
6. Any emissions warranty is applicable only for steady-state conditions and does shut-down, malfunction, or transient event.

Solar Turbines
A Caterpillar Company

PREDICTED ENGINE PERFORMANCE

Customer: *Harvest Midstream*	Model: **CENTAUR 40-4700S**
Job ID: **La Jara**	Package Type: **CS/MD**
Run By: **Jose Guillen** / Date Run: **26-Nov-19**	Match: **59F MATCH**
Engine Performance Code: **REV. 4.20.1.24.13** / Engine Performance Data: **REV. 2.3**	Fuel System: **GAS**
	Fuel Type: **SD NATURAL GAS**

DATA FOR NOMINAL PERFORMANCE

Elevation	feet	6325
Inlet Loss	in H2O	4.0
Exhaust Loss	in H2O	4.0
Accessory on GP Shaft	HP	15.5

		1	2	3	4
Engine Inlet Temperature	deg F	32.0	50.0	70.0	90.0
Relative Humidity	%	50.0	50.0	50.0	50.0
Driven Equipment Speed	RPM	15500	15500	15500	15247
Specified Load	HP	FULL	FULL	FULL	FULL
Net Output Power	HP	3795	3678	3368	2939
Fuel Flow	mmBtu/hr	35.21	34.20	31.87	29.14
Heat Rate	Btu/HP-hr	9278	9300	9461	9914
Therm Eff	%	27.424	27.359	26.895	25.664
Engine Exhaust Flow	lbm/hr	123920	119834	113169	104800
PT Exit Temperature	deg F	811	834	849	866
Exhaust Temperature	deg F	811	834	849	866

Fuel Gas Composition (Volume Percent)

Methane (CH4)	92.79
Ethane (C2H6)	4.16
Propane (C3H8)	0.84
N-Butane (C4H10)	0.18
N-Pentane (C5H12)	0.04
Hexane (C6H14)	0.04
Carbon Dioxide (CO2)	0.44
Hydrogen Sulfide (H2S)	0.0001
Nitrogen (N2)	1.51

Fuel Gas Properties

LHV (Btu/Scf)	939.2	Specific Gravity	0.5970	Wobbe Index at 60F	1215.6

This performance was calculated with a basic inlet and exhaust system. Special noise silencers, special filters, heat recovery systems or cooling devices will Performance shown is "Expected" performance at the pressure drops stated, not g

SOLAR TURBINES INCORPORATED DATE RUN: -APR-92
ENGINE PERFORMANCE DATA REV. 5.5
EXHAUST GAS AND EMISSION DATA REV. 5.9
TEXT CHANGES REV. 5.4
PCB ID : 0

--- SUMMARY OF ENGINE PERFORMANCE DATA --- 2 ITERATIONS

ENGINE : CENTAUR
MODEL : T-4000
TYPE : CS/MD
RATING : STANDARD
FUEL : GAS FUEL

DATA FOR NOMINAL PERFORMANCE

GENERAL INPUT SPECIFICATIONS

SD NATURAL GAS		FUEL USE
6325.0	FEET	ALTITUDE
59.00	DEG. F	AMBIENT TEMPERATURE
60.0	PERCENT	RELATIVE HUMIDITY
0.00	INCH. H2O	INLET PRESSURE LOSS
3.00	INCH. H2O	EXHAUST PRESSURE LOSS
0.0	HP	ACCESSORY HORSEPOWER AT GP SHAFT
0.0000	LB/MIN	COMPRESSOR DISCHARGE BLEED

MECHANICAL INPUT SPECIFICATIONS

1.0000	---	GEARBOX RATIO,(N EQUIPMENT/N POWER TURBINE)
1.0000	---	GEARBOX EFFICIENCY
14977.	R.P.M.	OPTIMUM POWER TURBINE SPEED
14901.	R.P.M.	SPEED OF GAS PRODUCER TURBINE

DYNAMIC AND THERMODYNAMIC PERFORMANCE DATA

3025.4	HP	OUTPUT POWER AFTER GEARBOX
1060.9	LBS-FT	OUTPUT TORQUE AFTER GEARBOX
28.5752	MMBTU/HR	FUEL FLOW
9.445	KBTU/HP-HR	SPECIFIC FUEL CONSUMPTION
1774.7	LB/MIN	INLET AIR FLOW
1797.8	LB/MIN	ENGINE EXHAUST FLOW
93.36	P.S.I.G.	CMP. DIFFUSER EXIT STATIC PRESSURE
595.1	DEG. F	CMP. DIFFUSER EXIT TEMPERATURE
1550.0	DEG. F	GAS PRODUCER TURBINE INLET TMP.
1085.4	DEG. F	POWER TURBINE INLET TEMPERATURE
788.2	DEG. F	ENGINE EXHAUST TEMPERATURE

FUEL GAS COMPOSITION (VOLUME PERCENT)

=	0.0000	CH4	= 92.7900	C2H4	= 0.0000	C2H6	=	4.1600
C3H6	= 0.0000	C3H8	= 0.8400	C4	= 0.1800	C5	=	0.0400
C6	= 0.0400	C7	= 0.0000	C8	= 0.0000	CO	=	0.0000
CO2	= 0.4400	H2	= 0.0000	H2O	= 0.0000	H2S	=	0.0001
N	= 1.5100	O2	= 0.0000	SO2	= 0.0000			

SOLAR TURBINES INCORPORATED
ENGINE PERFORMANCE CODE REV. 2.71
CUSTOMER: WILLIAMS FIELD SERVICES
JOB ID: LAJARA STATION

DATE RUN: 12-AUG-96
RUN BY: BYRD, DE

CENTAUR 40-T4700
CS/MD
59F MATCH
GAS
TCD-2 REV. 2.0
ES-1872

DATA FOR MINIMUM PERFORMANCE

Fuel Type	SD NATURAL GAS	
Elevation	Feet	0
Inlet Loss	in. H2O	0
Exhaust Loss	in. H2O	0
Engine Inlet Temp.	Deg. F	59.0
Relative Humidity	%	60.0
Inlet Loss	Hp	0
Exhaust Loss	Hp	0
Off-Optimum NPT Loss	Hp	9
Driven Equipment Speed	RPM	15500
Optimum Equipment Speed	RPM	16228
Gas Generator Speed	RPM	15000
Specified Load	Hp	FULL
Net Output Power	Hp	4559
Fuel Flow	MMBtu/hr	42.79
Heat Rate	Btu/Hp-hr	9386
Inlet Air Flow	lbm/hr	148698
Engine Exhaust Flow	lbm/hr	150744
PCD	psi(g)	134.4
PT Inlet Temp. (T5)	Deg. F	1140
Compensated PTIT	Deg. F	1190
Exhaust Temperature	Deg. F	835

SOLAR TURBINES INCORPORATED
ENGINE PERFORMANCE CODE REV. 2.71
CUSTOMER: WILLIAMS FIELD SERVICES
JOB ID: LAJARA STATION

DATE RUN: 12-AUG-96
RUN BY: BYRD, DE

CENTAUR 40-T4700
CS/MD
59F MATCH
GAS
TCD-2 REV. 2.0
ES-1872

DATA FOR MINIMUM PERFORMANCE

Fuel Type		SD NATURAL GAS					
Elevation	Feet	6200					
Inlet Loss	in. H2O	3.0					
Exhaust Loss	in. H2O	3.0					
Accessory on GP Shaft	Hp	8.0					
Engine Inlet Temp.	Deg. F	20.0	40.0	60.0	80.0	100.0	
Relative Humidity	%	20.0	20.0	20.0	20.0	20.0	
Elevation Loss	Hp	1085	1039	1005	897	789	
Inlet Loss	Hp	70	68	66	62	56	
Exhaust Loss	Hp	31	31	31	30	28	
Off-Optimum NPT Loss	Hp	4	5	4	0	0	
Driven Equipment Speed	RPM	15500	15500	15500	15500	14884	
Optimum Equipment Speed	RPM	16042	16090	16038	15583	14884	
Gas Generator Speed	RPM	15000	15000	14944	14709	14476	
Specified Load	Hp	FULL	FULL	FULL	FULL	FULL	
Net Output Power	Hp	3779	3672	3502	3110	2674	
Fuel Flow	MMBtu/hr	35.94	34.95	33.45	30.73	27.70	
Heat Rate	Btu/Hp-hr	9510	9516	9551	9879	10359	
Inlet Air Flow	lbm/hr	125552	121505	116680	109073	100593	
Engine Exhaust Flow	lbm/hr	127271	123176	118280	110542	101917	
PCD	psi(g)	112.3	109.2	105.2	97.4	89.7	
PT Inlet Temp. (T5)	Deg. F	1100	1118	1140	1140	1140	
Compensated PTIT	Deg. F	1150	1168	1190	1190	1190	
Exhaust Temperature	Deg. F	797	818	840	855	872	

SOLAR TURBINES INCORPORATED
ENGINE PERFORMANCE CODE REV. 2.71
CUSTOMER: WILLIAMS FIELD SERVICES
JOB ID: LAJARA STATION

DATE RUN: 12-AUG-96
RUN BY: BYRD, DE

NEW EQUIPMENT PREDICTED EMISSION PERFORMANCE
DATA FOR POINT NUMBER 1

Fuel: SD NATURAL GAS
Water Injection: NO
Number of Engines Tested: 15
Model: CENTAUR 40-T4700 CS/MD 59F MATCH GAS
Emissions Data: REV. 1.2

Customer: WILLIAMS FIELD SERVICES
Inquiry Number: LAJARA STATION

CRITICAL WARNINGS IN USE OF DATA FOR PERMITTING

1. Short term permitting values such as PPMV or lbs/hr should be based on worst case actual operating conditions specific to the application and the site. Worst case for one pollutant is not necessarily the same for another. The values on this form are only predicted emissions at one specific operating condition; not necessarily the worst case.

2. Long term reference emission units (e.g. tons/yr) should reference the average conditions at the site (e.g. ISO). That number should not be derived from the worst case value referenced above, or conversely this average must not be used to calculate worst case.

3. Nominal values are based on actual test results, or predicted in the case of no actual engine tests. Expected maximum values should be referenced for permitting.

4. If a SoLoNOx model is planned to be installed in the future, use no less than 50 PPMv CO.

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

Hp= 3779, %Full Load= 100.0, Elev= 6200 ft, %RH= 20.0, Temperature= 20.0 F

NOX		CO		UHC		
NOM	MAX	NOM	MAX	NOM	MAX	
105.23	167.00	28.78	50.00	2.863	50.000	PPMvd at 15% O2
66.41	105.39	11.06	19.21	0.630	11.003	ton/yr
0.422	0.669	0.070	0.122	0.0040	0.0699	lbm/MMBtu (Fuel LHV)

OTHER IMPORTANT NOTES

1. Solar does not provide maximum values for water-to-fuel ratio, SOx, particulates, or conditions outside those above without separate written approval.
2. Solar can optionally provide factory testing in San Diego to ensure the actual unit(s) meet the above values within the tolerances quoted. Pricing and schedule impact will be provided upon request.
3. Fuel must meet Solar standard fuel specification ES 9-98. Predicted emissions are based on the attached fuel composition, or, San Diego natural gas or equivalent.
4. If the above information is being used regarding existing equipment, it should be verified by actual site testing.

Solar Turbines
A Caterpillar Company

PREDICTED EMISSION PERFORMANCE

Customer: Wm Brothers	Engine Model: CENTAUR 40-T4700S CS/MD 59F MATCH SHIPMENTS AFTER 1/95
Job ID:	
Inquiry Number:	Fuel Type: SD NATURAL GAS — Water Injection: NO
Run By: NAPIERALA. GP — Date Run: 18-AUG-97	Engine Emissions Data: REV. 0.1 — Engines Tested: 0

Critical Warnings in Use of Data for Permitting

1. Short term permitting values such as PPMV or lbs/hr should be based on worst case actual operating conditions specific to the application and the site. Worst case for one pollutant is not necessarily the same for another. The values on this form are only predicted emissions at one specific operating condition; not necessarily the worst case.
2. Long term reference emission units (e.g. tons/yr) should reference the average conditions at the site (e.g. ISO). That number should not be derived from the worst case value referenced above, or conversely this average must not be used to calculate worst case.
3. Nominal values are based on actual test results, or predicted in the case of no actual engine tests. Expected maximum values should be referenced for permitting.
4. If a SoLoNOx model is planned to be installed in the future, use no less than 50 PPMv CO.

	NOx EMISSIONS		CO EMISSIONS		UHC EMISSIONS	
	Nominal	Maximum	Nominal	Maximum	Nominal	Maximum
1 — 3934 Hp — 100.0% Load — Elev. 6325 ft — Rel. Humidity 60.0% — Temperature 10.0 Deg. F						
PPMvd at 15% O2	*	25.00	*	50.00	*	25.000
ton/yr	*	15.93	*	19.40	*	5.565
lbm/MMBtu (Fuel LHV)	*	0.100	*	0.122	*	0.0349
2 — 3834 Hp — 100.0% Load — Elev. 6325 ft — Rel. Humidity 60.0% — Temperature 30.0 Deg. F						
PPMvd at 15% O2	*	25.00	*	50.00	*	25.000
ton/yr	*	15.50	*	18.88	*	5.406
lbm/MMBtu (Fuel LHV)	*	0.100	*	0.122	*	0.0349
3 — 3593 Hp — 100.0% Load — Elev. 6325 ft — Rel. Humidity 60.0% — Temperature 60.0 Deg. F						
PPMvd at 15% O2	*	25.00	*	50.00	*	25.000
ton/yr	*	14.53	*	17.70	*	5.068
lbm/MMBtu (Fuel LHV)	*	0.099	*	0.121	*	0.0347
4 — 3089 Hp — 100.0% Load — Elev. 6325 ft — Rel. Humidity 60.0% — Temperature 85.0 Deg. F						
PPMvd at 15% O2	*	25.00	*	50.00	*	25.000
ton/yr	*	12.96	*	15.78	*	4.520
lbm/MMBtu (Fuel LHV)	*	0.098	*	0.120	*	0.0343

Other Important Notes

1. Solar does not provide maximum values for water-to-fuel ratio, SOx, particulates, or conditions outside those above without separate written approval.
2. Solar can optionally provide factory testing in San Diego to ensure the actual unit(s) meet the above values within the tolerances quoted. Pricing and schedule impact will be provided upon request.
3. Fuel must meet Solar standard fuel specification ES 9-98. Predicted emissions are based on the attached fuel composition, or, San Diego natural gas or equivalent.
4. If the above information is being used regarding existing equipment, it should be verified by actual site testing.

Solar Turbines

A Caterpillar Company

PREDICTED ENGINE PERFORMANCE

Customer	Model
Wm Brothers	CENTAUR 40-T4700S
Job ID	Package Type: CS/MD
	Match: 59F MATCH
Run By: NAPIERALA, GP	Date Run: 18-AUG-97
Engine Performance Code: REV. 2.82	Engine Performance Data: REV. 2.2
	Fuel System: GAS
	Fuel Type: SD NATURAL GAS

Elevation	Feet	6325
Inlet Loss	in. H2O	3.0
Exhaust Loss	in. H2O	3.0
Accessory on GP Shaft	Hp	14.0

		1	2	3	4
Engine Inlet Temperature	Deg. F	10.0	30.0	60.0	85.0
Relative Humidity	%	60.0	60.0	60.0	60.0
Driven Equipment Speed	RPM	15500	15500	15500	15500
Specified Load	Hp	FULL	FULL	FULL	FULL
Net Output Power	Hp	3816	3719	3485	2997
Heat Rate	Btu/Hp-hr	9516	9515	9573	10043
ominal Net Output Power	Hp	3934	3834	3593	3089
ominal Heat Rate	Btu/Hp-hr	9230	9230	9286	9742
Fuel Flow	MMBtu/hr	36.31	35.39	33.36	30.09
Engine Exhaust Flow	lbm/hr	128611	124664	117357	107429
Exhaust Temperature	Deg. F	789	807	841	860

DRESSER Waukesha

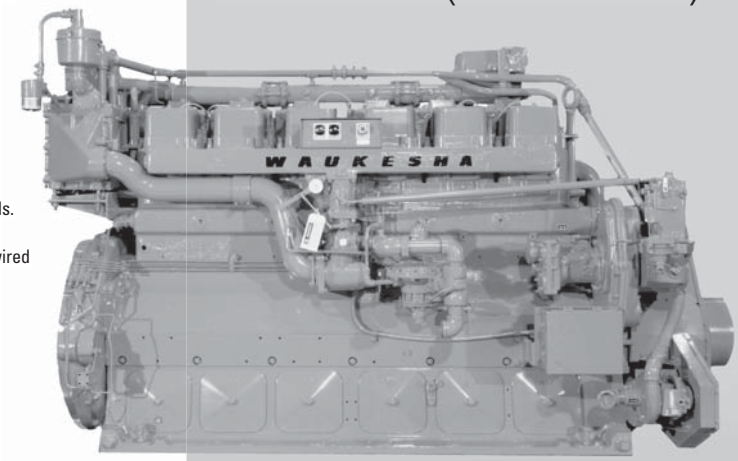
F3521G

STANDARD EQUIPMENT

AIR CLEANER – Dry type with rain shield and service indicator.
BARRING DEVICE – Manual.
BEARINGS – Heavy duty, replaceable, precision type.
BREATHER – Closed system.
CONNECTING RODS – Drop forged steel, rifle drilled.
CONTROL SYSTEM – Pneumatic. Includes pilot operated valves for air start and prelube. Engine mounted control panel with two push button valves. Pilot operated air start valves omitted when starter is not furnished by Waukesha. Includes engine On/Off push button. One mounted on either side of the engine.
CRANKCASE – Integral crankcase and cylinder frame. Main bearing caps drilled and tapped for temperature sensors. Does not include sensors.
CRANKSHAFT – Counterweighted, forged steel, seven main bearings, and dynamically balanced.
CYLINDERS - Removable wet type cylinder liners, chrome plated on outer diameter.
CYLINDER HEADS - Six interchangeable, valve-in-head type. Two hard faced exhaust valves per cylinder. Hard faced intake and exhaust valve seat inserts. Roller valve lifters and hydraulic push rods.
ENGINE MONITOR DEVICES – Engine thermocouples, K-type, are wired to a common junction box for jacket water temperature, lube oil temperature and intake manifold temperature. Magnetic pickup wired for customer supplied tachometer. Lube oil pressure and intake manifold pressure sensing lines are terminated in a common bulk head.
ENGINE ROTATION – Counterclockwise when facing flywheel.
FLYWHEEL – Approx. WR^2 = 155000 lb-in^2; with ring gear (208 teeth), machined to accept two drive adapters: 31.88" (810 mm) pilot bore, 30.25" (768 mm) bolt circle, (12) 0.75"-10 tapped holes; or 28.88" (734 mm) pilot bore, 27.25" (692 mm) bolt circle, (12) 0.625"-11 tapped holes and (12) 0.75"-10 tapped holes.
FLYWHEEL HOUSING – No. 00 SAE.
FUEL SYSTEM – Natural gas, 4" (102 mm) updraft. Fisher Model S-201 2" (51 mm) gas regulator, 13 psi (89 kPa) maximum inlet pressure.
GOVERNOR – Woodward UG-8LD hydraulic lever type, with friction type speed control. Mounted on right hand side.
IGNITION – Waukesha Custom Engine Control® Ignition Module. Electronic digital ignition system. 24V DC power required.
LEVELING BOLTS
LIFTING EYES – Requires 9.5 ton Working Load Limit (W.L.L.) anchor shackles.
LUBRICATION – Full pressure. Gear type pump. Full flow filter, 20 gallon (76 litres) capacity, not mounted. Includes flexible connections. Includes lube oil strainer, mounted on engine. Air/gas motor driven prelube pump. Requires final piping.
MANIFOLD – Exhaust, water cooled, vertical 5" (127 mm) pipe flange at rear and flexible stainless steel exhaust connection.
OIL COOLER – Shell and tube type, with thermostatic temperature controller. Mounted on left hand side.
OIL PAN – Base type. 66 gallon (250 litres) capacity including filter.
PAINT – Oilfield orange primer.
PISTONS – Aluminum with floating pin. Standard 10:1 compression ration. Oil cooled.
SHIPPING SKID – For domestic truck or rail.
VIBRATION DAMPER – Viscous type. Guard included with remote mounted radiator or no radiator.
WATER CIRCULATING SYSTEM, AUXILIARY CIRCUIT – For oil cooler. Pump is belt driven from crankshaft pulley.
WATER CIRCULATING SYSTEM, ENGINE JACKET – Belt driven water circulating pump, cluster type thermostatic temperature regulating valve, full flow bypass type with 165° - 170°F (74° - 77°C) start to open thermostats. Flange connections and mating flanges for 4" (102 mm) inlet and outlet.

VHP® Series Gas Engine

366 - 515 BHP (273 - 384 kWb)



Model F3521G

Six Cylinder, Four-Cycle Gas Fueled Engine

SPECIFICATIONS

Cylinders
Inline 6
Piston Displacement
3520 cu. in. (58 L)
Bore & Stroke
9.375" x 8.5" (238 x 216 mm)
Compression Ratio
10:1
Jacket Water System Capacity
48.5 gal. (184 L)
Lube Oil Capacity
72 gal. (273 L)
Starting System
50 - 150 psi air/gas
24 V DC electric
Dry Weight
14,500 lb. (6577 kg)

CONTINUOUS POWER RATINGS: F3521G VHP® SERIES GAS ENGINES

		Brake Horsepower (kWb Output)			
Model	C.R.	800 rpm	900 rpm	1000 rpm	1200 rpm
F3521G	10:1	366 (273)	409 (305)	448 (334)	515 (384)

Rating Standard: All models: Ratings are based on ISO 3046/1-1995 with mechanical efficiency of 90% and auxiliary water temperature Tcra (clause 10.1) as specified above limited to ± 10° F (± 5° C). Ratings are also valid for SAE J1349, BS5514, DIN6271 and AP17B-11C standard atmospheric conditions.

ISO Standard Power/Continuous Power Rating: The highest load and speed which can be applied 24 hours a day, seven days a week, 365 days per year except for normal maintenance. It is permissible to operate the engine at up to 10% overload, or maximum load indicated by the intermittent rating, whichever is lower, for two hours in each 24 hour period.

All natural gas engine ratings are based on a fuel of 900 Btu/ft^3 (35.3 MJ/nm^3) SLHV, with a 91 WKI®. For conditions or fuels other than standard, contact the Dresser Waukesha Application Engineering Department.

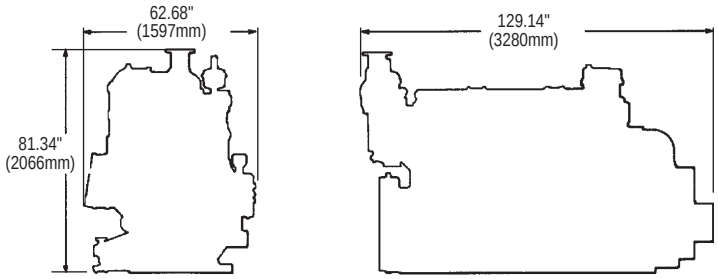
PERFORMANCE: F3521G VHP® SERIES GAS ENGINES

	English			Metric		
3-Way Catalyst Settings	RPM	1200	1000	RPM	1200	1000
	Power (Bhp)	515	448	Power (kWb)	384	334
	BSFC (Btu/bhp-hr)	7301	7269	BSFC (kJ/kW-hr)	10330	10284
	NOx (grams/bhp-hr)	13.0	13.0	NOx (g/nm^3)	4.8	4.8
	CO (grams/bhp-hr)	9.0	9.0	CO (g/nm^3)	3.3	3.3
	NMHC (grams/bhp--hr)	0.3	0.3	NMHC (g/nm^3)	0.12	0.12

NOTES:

1) Fuel consumption and exhaust emissions are based on ISO 3046/1-1995 standard reference conditions and commercial quality natural gas of 900 Btu/ft^3 (35.38 MJ/m^3 [25, V(0; 101.325)]) saturated lower heat value, Waukesha Knock Index® of 91 and 93% methane content by volume. ISO 3046/1-1995 standard reference conditions are 77°F (25°C) ambient temperature, 29.54 inches Hg (100 kPa) barometric pressure, 30% relative humidity (1kPa/0.3 inches Hg water vapor pressure).
2) S.I. exhaust emissions are corrected to 5% O_2 (0°C and 101.325 kPa).
3) Data will vary due to variations in site conditions. For conditions and/or fuels other than standard, consult the Dresser Waukesha Application Engineering Department.
4) Fuel consumption bassed on ISO 3046/1-1995 with a +5% tolerance for commercial quality natural gas having a 900 Btu/ft^3 saturated low heat valve

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



Bulletin 7008 1008

Dresser Waukesha
1101 West St. Paul Avenue · Waukesha, WI 53188-4999
Phone: (262) 547-3311 · Fax: (262) 549-2795

DRESSER® Waukesha

www.dresser.com

HEAT BALANCE DATA — MODEL F3521G NATURAL GAS 10:1 CR								
	BMEP	ENGINE SPEED — RPM						
		600	700	800	900	1000	1100	1200
HORSEPOWER	110	293	342	391	440	489	538	587
	100	267	311	356	400	445	489	534
	90	240	280	320	360	400	440	480
	80	214	249	285	320	354	391	427
	70	187	218	249	280	311	342	373
	60	160	187	214	240	267	294	320
	50	133	156	178	200	222	244	267
	40	107	125	142	160	178	196	214
FUEL CONSUMPTION (BTU/MIN)	110	35,135	40,814	46,462	52,401	58,324	64,485	70,436
	100	32,739	37,782	43,040	48,334	53,917	59,436	64,981
	90	30,259	34,775	39,506	44,388	49,411	54,431	59,432
	80	27,946	31,954	36,269	40,587	45,049	49,816	54,429
	70	25,544	29,081	32,943	36,849	40,401	45,121	49,112
	60	23,197	26,330	29,770	33,186	36,843	40,531	44,010
	50	20,595	23,517	26,367	29,488	32,722	35,848	39,016
	40	18,180	20,693	23,090	25,876	28,678	31,433	34,153
HEAT REJECTION TO JACKET WATER (BTU/MIN)	110	11,368	13,269	15,170	17,072	18,973	20,874	22,775
	100	10,546	12,284	14,062	15,800	17,577	19,315	21,093
	90	9,720	11,340	12,960	14,580	16,200	17,820	19,440
	80	8,988	10,458	11,970	13,440	14,868	16,422	17,934
	70	8,228	9,592	10,956	12,320	13,648	15,048	16,412
	60	7,424	8,676	9,929	11,136	12,388	13,641	14,848
	50	6,583	7,722	8,811	9,900	10,989	12,078	13,216
	40	5,735	6,700	7,611	8,576	9,540	10,505	11,470
HEAT REJECTION TO EXHAUST (BTU/MIN)	110	7,739	9,163	10,555	12,237	13,906	15,811	17,507
	100	7,330	8,527	9,834	11,264	12,897	14,554	16,147
	90	6,949	7,905	9,076	10,398	11,861	13,321	14,762
	80	6,502	7,321	8,356	9,458	10,851	12,247	13,508
	70	6,092	6,727	7,688	8,691	9,387	11,161	12,250
	60	5,756	6,289	7,117	8,016	9,062	10,138	11,100
	50	5,227	5,827	6,460	7,358	8,373	9,238	10,127
	40	4,787	5,375	5,954	6,814	7,693	8,522	9,254
HEAT REJECTION TO OIL (BTU/MIN)	110	1,714	2,000	2,287	2,574	2,860	3,147	3,433
	100	1,628	1,897	2,171	2,440	2,714	2,982	3,257
	90	1,512	1,764	2,016	2,268	2,520	2,772	3,024
	80	1,476	1,718	1,966	2,208	2,442	2,697	2,946
	70	1,383	1,613	1,842	2,072	2,301	2,530	2,760
	60	1,304	1,524	1,744	1,956	2,176	2,396	2,608
	50	1,223	1,435	1,637	1,840	2,042	2,244	2,456
	40	1,193	1,393	1,583	1,784	1,984	2,185	2,386

HEAT BALANCE DATA — MODEL F3521G NATURAL GAS 10:1 CR								
	BMEP	ENGINE SPEED — RPM						
		600	700	800	900	1000	1100	1200
EXHAUST TEMPERATURE (°F)	110	848	934	982	1,018	1,038	1,054	1,062
	100	850	923	972	1,009	1,033	1,050	1,060
	90	850	912	962	998	1,025	1,047	1,056
	80	842	898	949	986	1,018	1,042	1,052
	70	826	881	934	973	1,010	1,035	1,047
	60	805	863	916	959	1,000	1,027	1,040
	50	777	840	895	945	987	1,017	1,026
	40	745	816	870	930	972	1,003	1,020
EXHAUST FLOW (CFM)	110	1,348	1,534	1,746	1,981	2,236	2,528	2,792
	100	1,276	1,434	1,612	1,830	2,077	2,330	2,576
	90	1,209	1,336	1,502	1,681	1,911	2,135	2,358
	80	1,136	1,245	1,390	1,554	1,757	1,966	2,161
	70	1,073	1,153	1,286	1,432	1,617	1,796	1,963
	60	1,008	1,077	1,201	1,328	1,477	1,636	1,783
	50	941	1,019	1,106	1,226	1,372	1,504	1,635
	40	810	944	1,026	1,142	1,268	1,385	1,497
INDUCTION AIR REQUIREMENT (CFM)	110	493	539	592	657	736	815	901
	100	470	506	552	615	684	756	835
	90	440	476	519	578	638	697	763
	80	417	447	486	536	593	644	699
	70	398	412	453	500	546	592	638
	60	375	401	427	467	506	546	585
	50	351	378	407	431	467	503	539
	40	338	355	381	407	434	463	493

NOTES:

1. 6 Cylinder 9-3/8 in. Bore x 8-1/2 in. stroke, 3520 Cu. In. Displacement, water cooled exhaust manifold.
2. LB/MIN EXH. = CFM x 0.0745 x $\frac{520}{\text{EXH.TEMP.} + 460}$

DRESSER Waukesha	HEAT BALANCE DATA MODEL F3521G NATURAL GAS 10:1 CR	DR: GERARD DATE: 1/76 APP'D: OFM	Ref. S 6124-2

Table 3.1-2a. EMISSION FACTORS FOR CRITERIA POLLUTANTS AND GREENHOUSE GASES FROM STATIONARY GAS TURBINES

Emission Factors[a] - Uncontrolled				
Pollutant	Natural Gas-Fired Turbines[b]		Distillate Oil-Fired Turbines[d]	
	(lb/MMBtu)[c] (Fuel Input)	Emission Factor Rating	(lb/MMBtu)[e] (Fuel Input)	Emission Factor Rating
CO_2[f]	110	A	157	A
N_2O	0.003[g]	E	ND	NA
Lead	ND	NA	1.4 E-05	C
SO_2	0.94S[h]	B	1.01S[h]	B
Methane	8.6 E-03	C	ND	NA
VOC	2.1 E-03	D	4.1 E-04[j]	E
TOC[k]	1.1 E-02	B	4.0 E-03[l]	C
PM (condensible)	4.7 E-03[l]	C	7.2 E-03[l]	C
PM (filterable)	1.9 E-03[l]	C	4.3 E-03[l]	C
PM (total)	6.6 E-03[l]	C	1.2 E-02[l]	C

[a] Factors are derived from units operating at high loads (≥ 80 percent load) only. For information on units operating at other loads, consult the background report for this chapter (Reference 16), available at "www.epa.gov/ttn/chief". ND = No Data, NA = Not Applicable.

[b] SCCs for natural gas-fired turbines include 2-01-002-01, 2-02-002-01 & 03, and 2-03-002-02 & 03.

[c] Emission factors based on an average natural gas heating value (HHV) of 1020 Btu/scf at 60°F. To convert from (lb/MMBtu) to ($lb/10^6$ scf), multiply by 1020. Similarly, these emission factors can be converted to other natural gas heating values.

[d] SCCs for distillate oil-fired turbines are 2-01-001-01, 2-02-001-01, 2-02-001-03, and 2-03-001-02.

[e] Emission factors based on an average distillate oil heating value of 139 $MMBtu/10^3$ gallons. To convert from (lb/MMBtu) to ($lb/10^3$ gallons), multiply by 139.

[f] Based on 99.5% conversion of fuel carbon to CO_2 for natural gas and 99% conversion of fuel carbon to CO_2 for distillate oil. CO_2 (Natural Gas) [lb/MMBtu] = (0.0036 scf/Btu)(%CON)(C)(D), where %CON = weight percent conversion of fuel carbon to CO_2, C = carbon content of fuel by weight, and D = density of fuel. For natural gas, C is assumed at 75%, and D is assumed at 4.1 E+04 $lb/10^6$scf. For distillate oil, CO_2 (Distillate Oil) [lb/MMBtu] = (26.4 gal/MMBtu) (%CON)(C)(D), where C is assumed at 87%, and the D is assumed at 6.9 lb/gallon.

[g] Emission factor is carried over from the previous revision to AP-42 (Supplement B, October 1996) and is based on limited source tests on a single turbine with water-steam injection (Reference 5).

[h] All sulfur in the fuel is assumed to be converted to SO_2. S = percent sulfur in fuel. Example, if sulfur content in the fuel is 3.4 percent, then S = 3.4. If S is not available, use 3.4 E-03 lb/MMBtu for natural gas turbines, and 3.3 E-02 lb/MMBtu for distillate oil turbines (the equations are more accurate).

[j] VOC emissions are assumed equal to the sum of organic emissions.

[k] Pollutant referenced as THC in the gathered emission tests. It is assumed as TOC, because it is based on EPA Test Method 25A.

[l] Emission factors are based on combustion turbines using water-steam injection.

Table 3.2-3. UNCONTROLLED EMISSION FACTORS FOR 4-STROKE RICH-BURN ENGINES[a]
(SCC 2-02-002-53)

Pollutant	Emission Factor (lb/MMBtu)[b] (fuel input)	Emission Factor Rating
Criteria Pollutants and Greenhouse Gases		
NO_x[c] 90 - 105% Load	2.21 E+00	A
NO_x[c] <90% Load	2.27 E+00	C
CO[c] 90 - 105% Load	3.72 E+00	A
CO[c] <90% Load	3.51 E+00	C
CO_2[d]	1.10 E+02	A
SO_2[e]	5.88 E-04	A
TOC[f]	3.58 E-01	C
Methane[g]	2.30 E-01	C
VOC[h]	2.96 E-02	C
PM10 (filterable)[i,j]	9.50 E-03	E
PM2.5 (filterable)[j]	9.50 E-03	E
PM Condensable[k]	9.91 E-03	E
Trace Organic Compounds		
1,1,2,2-Tetrachloroethane[l]	2.53 E-05	C
1,1,2-Trichloroethane[l]	<1.53 E-05	E
1,1-Dichloroethane	<1.13 E-05	E
1,2-Dichloroethane	<1.13 E-05	E
1,2-Dichloropropane	<1.30 E-05	E
1,3-Butadiene[l]	6.63 E-04	D
1,3-Dichloropropene[l]	<1.27 E-05	E
Acetaldehyde[l,m]	2.79 E-03	C
Acrolein[l,m]	2.63 E-03	C
Benzene[l]	1.58 E-03	B
Butyr/isobutyraldehyde	4.86 E-05	D
Carbon Tetrachloride[l]	<1.77 E-05	E

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

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

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

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

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

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

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

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

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

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

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

TANKS 4.09d Condensate Liquid Input

NORMALIZED LA JARA COMPRESSOR STATION STORED CONDENSATE LIQUID SPECIATION PROFILE

Component	Mole Fraction	MW	Component Weight, lb/lb-mole (Mol fraction x MW)	Weight (Wt.) Fraction (lb/lb-mol / Total Liquid lb/lb-mol)	NORMALIZED TANKS 4.0.9d SPECIATION INPUT Wt%	Normalization method	TANKS Input Wt. %
CO2	1.98E-04	44.01	0.0087	9.00E-05	-		-
N2	5.98E-07	28.01	1.68E-05	1.73E-07	-		-
C1	7.38E-04	16.04	0.0118	0.0001	-		-
C2	6.43E-03	30.07	0.1934	0.0020	-		-
C3	2.98E-02	44.09	1.3141	0.0136	-		-
IC4	1.83E-02	58.12	1.0657	0.0110	1.8940	= ((i-Butane (IC4) Wt. fraction) + (Sum of CO2, N2, C1, C2, C3 Wt. fractions) / 2)) x 100	5.7198
NC4	5.04E-02	58.12	2.9318	0.0303	3.8257	= ((n-Butane (NC4) Wt. fraction) + (Sum of CO2, N2, C1, C2, C3 Wt. fractions) / 2)) x 100	-
IC5	4.83E-02	72.15	3.4881	0.0361	3.6107		3.6107
NC5	5.24E-02	72.15	3.7788	0.0391	3.9116		3.9116
Hexanes		86.17	0.0000	0.0000	-		-
Heptanes	2.06E-01	100.21	20.6279	0.2135	21.3529		21.3529
Octanes	1.70E-01	114.23	19.3772	0.2006	20.0583		20.0583
Nonanes	3.34E-02	128.20	4.2874	0.0444	4.4381		4.4381
Benzene	1.22E-02	78.11	0.9558	0.0099	0.9894		0.9894
Toluene	3.33E-02	92.14	3.0679	0.0318	3.1757		3.1757
E-Benzene	1.99E-03	106.17	0.2108	0.0022	0.2182		0.2182
Xylenes	1.76E-02	106.16	1.8720	0.0194	1.9378		1.9378
n-C6	2.55E-01	106.16	27.0881	0.2804	28.0403		28.0403
2,2,4-Trimethylpentane	0.00E+00	100.21	0.0000	0.0000	0.0000		0.0000
C10 Plus	1.60E-02	142.29	2.2786	0.0236	2.3587		2.3587
Cyclohexane	4.81E-02	84.16	4.0462	4.19E-02	4.1884		4.1884
Methylcyclohexane	0.00E+00	98.19	0.0000	0.0000	0.0000		0.0000
Total	1.0000		96.6	1.00	*100.0*		*100.0000*

Notes:

Hydrocarbon (HC) liquid stream composition for TANKS 4.09d input is based on the ProMax (Symmetry) analysis "La Jara - Condensate Tank Flash Model" output, , /Condensate_Truck_Loading (Material Stream)', 'Equilibrium Results', 'Fraction [Fraction]', column 'Liq0'.

The ProMax program includes the La Jara Compressor Station liquid stream sampled 7/19/2019 as input.

TANKS 4.09d speciation for

Butane = IC4 + NC4;
Heptanes = n-heptane + 2-methylhexane (isoheptane);
Octanes = n-octane + 2-methylheptane;
n-C6 = Hexanes + n-hexane + 2-methylpentane (isohexane)

Houston Laboratories
8820 Interchange Drive
Houston, TX 77054
Phone 713-660-0901

Certificate of Analysis

Number: 1030-19071057-001B

Aug. 06, 2019

Environmental Department
Harvest Midstream
1755 Arroyo Dr.
Bloomfield, NM 87413

Station Name: La Jara Compressor Station
Method: GPA 2186
Cylinder No: CP17
Analyzed: 08/05/2019 09:36:31 by JB

Sampled By: AB
Sample Of: Liquid Spot
Sample Date: 07/19/2019 09:20
Sample Conditions: 205 psig

Analytical Data

Components	Mol. %	Wt. %	L.V. %
Nitrogen	0.024	0.008	0.007
Methane	3.600	0.698	1.585
Carbon Dioxide	0.226	0.120	0.100
Ethane	3.117	1.132	2.165
Propane	5.504	2.932	3.938
Iso-Butane	2.263	1.589	1.923
n-Butane	5.606	3.936	4.590
Iso-Pentane	4.652	4.055	4.419
n-Pentane	4.934	4.301	4.645
i-Hexanes	15.862	16.337	16.694
n-Hexane	6.903	7.186	7.376
Benzene	1.092	1.031	0.794
Cyclohexane	4.265	4.337	3.769
i-Heptanes	13.774	15.786	14.938
n-Heptane	4.339	5.253	5.199
Toluene	2.927	3.258	2.546
i-Octanes	13.490	17.204	15.687
n-Octane	1.376	1.899	1.831
Ethylbenzene	0.174	0.224	0.175
Xylenes	1.544	1.982	1.550
i-Nonanes	2.414	3.543	3.169
n-Nonane	0.513	0.795	0.752
i-Decanes	0.879	1.439	1.271
Decanes Plus	0.522	0.955	0.877
	100.000	100.000	100.000

Calculated Physical Properties	Total	C10+
API Gravity at 60°F	76.2153	54.9797
Pounds per Gallon (in Air)	5.673	6.319
Pounds per Gallon (in Vacuum)	5.679	6.326
Cu. Ft. Vapor per Gallon @ 14.696 psia	26.039	16.916
Specific Gravity at 60°F	0.6812	0.7588
Molecular Weight	82.771	141.915
BTU / GAL. (as a vapor)	116774	128786
BTU / LB. (as a vapor)	20561	20355

Tom Berry

Hydrocarbon Laboratory Manager

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

2030 Afton Place, Farmington, NM 87401 - (505) 325-6622

GAS ANALYSIS SERVICE

C6+ ☐ C9+ ☐ C12+ BTEX ☐ Helium ☐
N2 Flowback ☐ Sulfurs ☐ Ext. Liquid ☑
Other _____ Date 7-19-19

Sampled By:(Co.) Apple Biosciences Co. Time 9:15 ☑AM ☐PM

Sampled by:(Person) Celia Lobato-Lina Well Flowing: ☑Yes ☐No

Company: Harvest Midstream Heat Trace: ☐Yes ☑No

Well Name: La Jara Compressor Station Flow Pressure (PSIG): 205

Lease#: Condensate suction pump, Trunk S Flow Temp (°F): —

County: _____ Formation: _____ Ambient Temp (°F): 85

State: _____ Location: _____ Flow Rate (MCF/D): —

Source: ☐ Meter Run ☐ Tubing ☐ Casing ☐ Bradenhead ☑ Other Condensate suction pump, Trunk S

Sample Type: ☑ Spot ☐ Composite Sample Method: ☐ Purge & Fill ☑ Other Water Displacement

Meter Number: _____ Cylinder Number: CP 02

Contact: Send Results to Khong@harvestmidstream.com

Remarks: Displaced 400cc water for sample, closed valve & Drained 75cc water for expansion

2030 Afton Place
Farmington, NM 87401
(505) 325-6622

Analysis No: HM200001
Cust No: 33700-10410

Well/Lease Information

Customer Name:	HARVEST MIDSTREAM	Source:	Station Inlet
Well Name:	La Jara Station	Well Flowing:	
County/State:		Pressure:	192 PSIG
Location:		Flow Temp:	53 DEG. F
Lease/PA/CA:		Ambient Temp:	31 DEG. F
Formation:		Flow Rate:	265 MCF/D
Cust. Stn. No.:		Sample Method:	Purge & Fill
		Sample Date:	12/31/2019
		Sample Time:	1.30 PM
		Sampled By:	Bobby Snell
Heat Trace:	N	Sampled by (CO):	Harvest Mid
Remarks:	Calculated Moleculare Weight = 20.2389		

Analysis

Component:	Mole%:	Unormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	1.0688	1.0543	0.1180	0.00	0.0103
CO2	1.6565	1.6340	0.2840	0.00	0.0252
Methane	82.6372	81.5147	14.0510	834.64	0.4577
Ethane	8.0037	7.8950	2.1470	141.64	0.0831
Propane	3.8334	3.7813	1.0590	96.45	0.0584
Iso-Butane	0.6777	0.6685	0.2220	22.04	0.0136
N-Butane	1.1385	1.1230	0.3600	37.14	0.0228
Neopentane 2,2 dmc3	0.0017	0.0017	0.0010	0.07	0.0000
I-Pentane	0.3515	0.3467	0.1290	14.06	0.0088
N-Pentane	0.2576	0.2541	0.0940	10.33	0.0064
Neohexane	0.0009	N/R	0.0000	0.04	0.0000
2-3-Dimethylbutane	0.0094	N/R	0.0040	0.45	0.0003
Cyclopentane	0.0098	N/R	0.0030	0.37	0.0002
2-Methylpentane	0.0635	N/R	0.0260	3.01	0.0019
3-Methylpentane	0.0282	N/R	0.0120	1.34	0.0008
C6	0.0702	0.3683	0.0290	3.34	0.0021
Methylcyclopentane	0.0426	N/R	0.0150	1.92	0.0012
Benzene	0.0096	N/R	0.0030	0.36	0.0003
Cyclohexane	0.0237	N/R	0.0080	1.06	0.0007
2-Methylhexane	0.0091	N/R	0.0040	0.50	0.0003
3-Methylhexane	0.0086	N/R	0.0040	0.47	0.0003
2-2-4-Trimethylpentane	0.0024	N/R	0.0010	0.15	0.0001
i-heptanes	0.0059	N/R	0.0030	0.31	0.0002
Heptane	0.0210	N/R	0.0100	1.16	0.0007

Methylcyclohexane	0.0379	N/R	0.0150	1.98	0.0013
Toluene	0.0113	N/R	0.0040	0.51	0.0004
2-Methylheptane	0.0056	N/R	0.0030	0.35	0.0002
4-Methylheptane	0.0028	N/R	0.0010	0.17	0.0001
i-Octanes	0.0025	N/R	0.0010	0.15	0.0001
Octane	0.0052	N/R	0.0030	0.32	0.0002
Ethylbenzene	0.0022	N/R	0.0010	0.11	0.0001
m, p Xylene	0.0002	N/R	0.0000	0.01	0.0000
o Xylene (& 2,2,4 tmc7)	0.0002	N/R	0.0000	0.01	0.0000
i-C9	0.0004	N/R	0.0000	0.03	0.0000
C9	0.0005	N/R	0.0000	0.03	0.0000
i-C10	0.0000	N/R	0.0000	0.00	0.0000
C10	0.0000	N/R	0.0000	0.00	0.0000
i-C11	0.0000	N/R	0.0000	0.00	0.0000
C11	0.0000	N/R	0.0000	0.00	0.0000
C12P	0.0000	N/R	0.0000	0.00	0.0000
Total	100.00	98.642	18.615	1174.51	0.6980

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY
**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBLITY FACTOR (1/Z):	1.0032
BTU/CU.FT IDEAL:	1177.2
BTU/CU.FT (DRY) CORRECTED FOR (1/Z):	1181.0
BTU/CU.FT (WET) CORRECTED FOR (1/Z):	1160.5
DRY BTU @ 15.025:	1204.7
REAL SPECIFIC GRAVITY:	0.6999

CYLINDER #:	11
CYLINDER PRESSURE:	187 PSIG
ANALYSIS DATE:	01/07/2020
ANALYIS TIME:	03:01:21 AM
ANALYSIS RUN BY:	PATRICIA KING

GPM, BTU, and SPG calculations as shown above are based on current GPA constants.
GPA Standard: GPA 2286-14
GC: SRI Instruments 8610 **Last Cal/Verify: 01/08/2020**
GC Method: C12+BTEX Gas

HARVEST MIDSTREAM

WELL ANALYSIS COMPARISON

Lease: La Jara Station | Station Inlet | 01/08/2020

Stn. No.: | | 33700-10410

Mtr. No.:

Smpl Date:	12/31/2019
Test Date:	01/07/2020
Run No:	HM200001
Nitrogen:	1.0688
CO2:	1.6565
Methane:	82.6372
Ethane:	8.0037
Propane:	3.8334
I-Butane:	0.6777
N-Butane:	1.1385
2,2 dmc3:	0.0017
I-Pentane:	0.3515
N-Pentane:	0.2576
Neohexane:	0.0009
2-3-	0.0094
Cyclopentane:	0.0098
2-Methylpentane:	0.0635
3-Methylpentane:	0.0282
C6:	0.0702
Methylcyclopentane:	0.0426
Benzene:	0.0096
Cyclohexane:	0.0237
2-Methylhexane:	0.0091
3-Methylhexane:	0.0000
2-2-4-	0.0024
i-heptanes:	0.0059
Heptane:	0.0210
Methylcyclohexane:	0.0379
Toluene:	0.0113
2-Methylheptane:	0.0056
4-Methylheptane:	0.0028
i-Octanes:	0.0025
Octane:	0.0052
Ethylbenzene:	0.0022
m, p Xylene:	0.0002
o Xylene (& 2,2,4	0.0002
i-C9:	0.0004
C9:	0.0005
i-C10:	0.0000
C10:	0.0000
i-C11:	0.0000
C11:	0.0000
C12P:	0.0000
BTU:	1181.0
GPM:	18.6310
SPG:	0.6999

2030 Afton Place, Farmington, NM 87401 - (505) 325-6622

187#

GAS ANALYSIS SERVICE

C6+ ☐ C9+ ☐ C12+ BTEX ☒ Helium ☐

N2 Flowback ☐ Sulfurs ☐ Ext. Liquid ☐

Other _____ Date 12/31/19

Sampled By:(Co.) _____ Time 1:30 ☐AM ☒PM

Sampled by:(Person) Bobby Snell Well Flowing: ☐ Yes ☐ No

Company: Harvest Midstream Heat Trace: ☐ Yes ☒ No

Well Name: La Jara Station Flow Pressure (PSIG): 192

Lease#: _____ Flow Temp (°F): 53

County: _____ Formation: _____ Ambient Temp (°F): 31

State: _____ Location: _____ Flow Rate (MCF/D): 265

Source: ☐ Meter Run ☐ Tubing ☐ Casing ☐ Bradenhead ☒ Other Station Inlet

Sample Type: ☒ Spot ☐ Composite Sample Method: ☒ Purge & Fill ☐ Other _____

Meter Number: _____ Cylinder Number: 11

Contact: _____

Remarks: 33700 - 10410 HM 200001

Ignacio

EPA-453/R-95-017

1995 Protocol for Equipment Leak Emission Estimates

Emission Standards Division

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Air and Radiation
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

November 1995

TABLE 2-4. OIL AND GAS PRODUCTION OPERATIONS AVERAGE EMISSION FACTORS (kg/hr/source)

Equipment Type	Service[a]	Emission Factor (kg/hr/source)[b]
Valves	Gas	4.5E-03
	Heavy Oil	8.4E-06
	Light Oil	2.5E-03
	Water/Oil	9.8E-05
Pump seals	Gas	2.4E-03
	Heavy Oil	NA
	Light Oil	1.3E-02
	Water/Oil	2.4E-05
Others[c]	Gas	8.8E-03
	Heavy Oil	3.2E-05
	Light Oil	7.5E-03
	Water/Oil	1.4E-02
Connectors	Gas	2.0E-04
	Heavy Oil	7.5E-06
	Light Oil	2.1E-04
	Water/Oil	1.1E-04
Flanges	Gas	3.9E-04
	Heavy Oil	3.9E-07
	Light Oil	1.1E-04
	Water/Oil	2.9E-06
Open-ended lines	Gas	2.0E-03
	Heavy Oil	1.4E-04
	Light Oil	1.4E-03
	Water/Oil	2.5E-04

[a]Water/Oil emission factors apply to water streams in oil service with a water content greater than 50%, from the point of origin to the point where the water content reaches 99%. For water streams with a water content greater than 99%, the emission rate is considered negligible.

[b]These factors are for total organic compound emission rates (including non-VOC's such as methane and ethane) and apply to light crude, heavy crude, gas plant, gas production, and off shore facilities. "NA" indicates that not enough data were available to develop the indicated emission factor.

[c]The "other" equipment type was derived from compressors, diaphrams, drains, dump arms, hatches, instruments, meters, pressure relief valves, polished rods, relief valves, and vents. This "other" equipment type should be applied for any equipment type other than connectors, flanges, open-ended lines, pumps, or valves.

loading operation, resulting in high levels of vapor generation and loss. If the turbulence is great enough, liquid droplets will be entrained in the vented vapors.

A second method of loading is submerged loading. Two types are the submerged fill pipe method and the bottom loading method. In the submerged fill pipe method, the fill pipe extends almost to the bottom of the cargo tank. In the bottom loading method, a permanent fill pipe is attached to the cargo tank bottom. During most of submerged loading by both methods, the fill pipe opening is below the liquid surface level. Liquid turbulence is controlled significantly during submerged loading, resulting in much lower vapor generation than encountered during splash loading.

The recent loading history of a cargo carrier is just as important a factor in loading losses as the method of loading. If the carrier has carried a nonvolatile liquid such as fuel oil, or has just been cleaned, it will contain vapor-free air. If it has just carried gasoline and has not been vented, the air in the carrier tank will contain volatile organic vapors, which will be expelled during the loading operation along with newly generated vapors.

Cargo carriers are sometimes designated to transport only one product, and in such cases are practicing "dedicated service". Dedicated gasoline cargo tanks return to a loading terminal containing air fully or partially saturated with vapor from the previous load. Cargo tanks may also be "switch loaded" with various products, so that a nonvolatile product being loaded may expel the vapors remaining from a previous load of a volatile product such as gasoline. These circumstances vary with the type of cargo tank and with the ownership of the carrier, the petroleum liquids being transported, geographic location, and season of the year.

One control measure for vapors displaced during liquid loading is called "vapor balance service", in which the cargo tank retrieves the vapors displaced during product unloading at bulk plants or service stations and transports the vapors back to the loading terminal. Figure 5.2-5 shows a tank truck in vapor balance service filling a service station underground tank and taking on displaced gasoline vapors for return to the terminal. A cargo tank returning to a bulk terminal in vapor balance service normally is saturated with organic vapors, and the presence of these vapors at the start of submerged loading of the tanker truck results in greater loading losses than encountered during nonvapor balance, or "normal", service. Vapor balance service is usually not practiced with marine vessels, although some vessels practice emission control by means of vapor transfer within their own cargo tanks during ballasting operations, discussed below.

Emissions from loading petroleum liquid can be estimated (with a probable error of ±30 percent)[4] using the following expression:

$$L_L = 12.46 \frac{SPM}{T} \quad (1)$$

where:

L_L = loading loss, pounds per 1000 gallons ($lb/10^3$ gal) of liquid loaded

S = a saturation factor (see Table 5.2-1)
P = true vapor pressure of liquid loaded, pounds per square inch absolute (psia) (see Figure 7.1-5, Figure 7.1-6, and Table 7.1-2)
M = molecular weight of vapors, pounds per pound-mole (lb/lb-mole) (see Table 7.1-2)
T = temperature of bulk liquid loaded, °R (°F + 460)

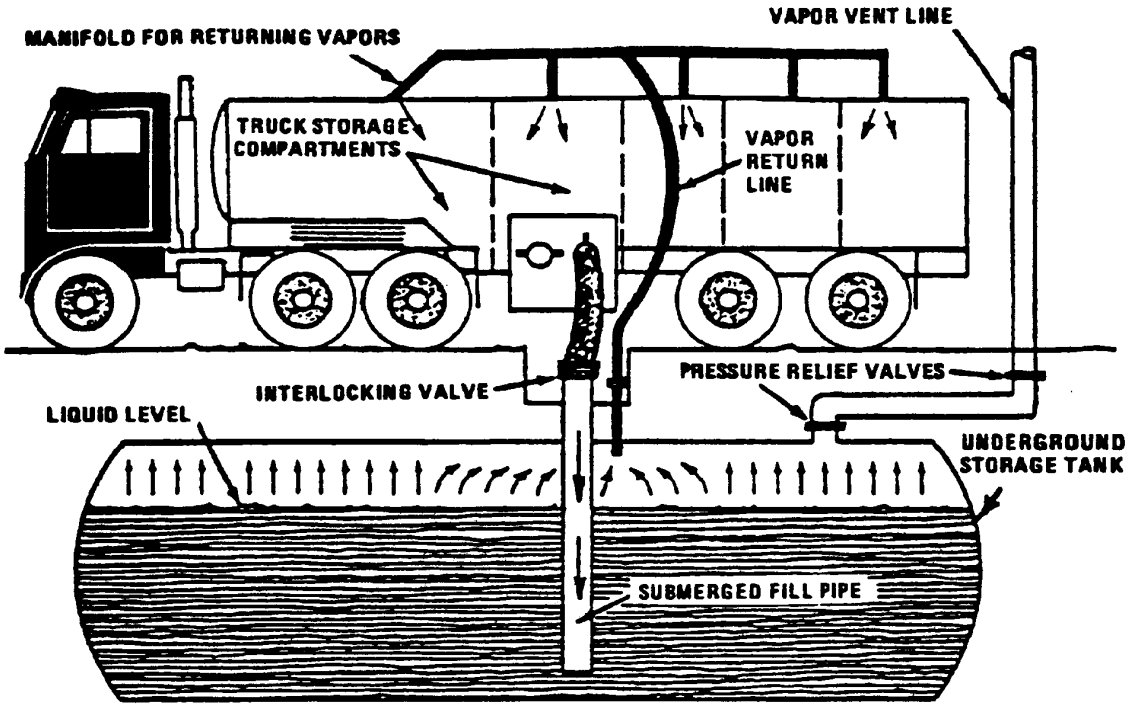


Figure 5.2-5. Tank truck unloading into a service station underground storage tank and practicing "vapor balance" form of emission control.

Table 5.2-1. SATURATION (S) FACTORS FOR CALCULATING PETROLEUM LIQUID LOADING LOSSES

Cargo Carrier	Mode Of Operation	S Factor
Tank trucks and rail tank cars	Submerged loading of a clean cargo tank	0.50
	Submerged loading: dedicated normal service	0.60
	Submerged loading: dedicated vapor balance service	1.00
	Splash loading of a clean cargo tank	1.45
	Splash loading: dedicated normal service	1.45
	Splash loading: dedicated vapor balance service	1.00
Marine vessels[a]	Submerged loading: ships	0.2
	Submerged loading: barges	0.5

[a] For products other than gasoline and crude oil. For marine loading of gasoline, use factors from Table 5.2-2. For marine loading of crude oil, use Equations 2 and 3 and Table 5.2-3.

PS Memo 09-02

To: **Stationary Sources Program, Local Agencies, and Regulated Community**

From: **Chris Laplante and Roland C. Hea, Colorado Air Pollution Control Division**

Date: **February 8, 2010**

Subject: **Oil & Gas Produced Water Tank Batteries**
Regulatory Definitions and Permitting Guidance

This guidance document is intended to answer frequently asked questions concerning oil and gas industry produced water tank batteries. This document does not address any other equipment types that may be part of a common facility with a tank battery. Nothing in this guidance should be construed regarding Air Pollution Control Division (Division) permitting of evaporation ponds or water treatment facilities. Please consult with the Division for information regarding the permitting of evaporation ponds or water treatment facilities.

Revision History

October 1, 2009	Initial issuance.
February 8, 2010	First revision. This guidance document replaces the October 1, 2009 version. Revised language to clarify APEN fee structure, definition of modification, APEN submittals, and produced water exemption.

Topic **Page**

3. EMISSION FACTORS AND SITE SPECIFIC SAMPLING Q&A

3.1. ***What are the State approved default emission factors for produced water tanks?***

County	Produced Water Tank Default Emission Factors[1] (lb/bbl)[2]		
	VOC	Benzene	n-Hexane
Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, Jefferson, Larimer, & Weld	0.262	0.007	0.022
Garfield, Mesa, Rio Blanco, & Moffat	0.178	0.004	0.010
Remainder of Colorado[3]	0.262	0.007	0.022

[1] Testing may be performed at any site to determine site-specific emissions factors. These default emission factors may be revised by the Division in the future, pending approved data and testing results.

[2] Units of lb/bbl means pounds of emissions per barrel of produced water throughput

[3] For counties not listed in this table, use the emissions factors listed as a conservative measure or perform testing to determine a site-specific emission factor

3.2. ***What type of emissions are included in the produced water tank state default emission factors?***

State default emission factors for produced water tanks include flash, working, and breathing losses.

3.3. ***Are there limits as to when produced water tank state default emission factors may be used?***

State default emission factors may be used at all oil and gas industry tank batteries. The Division intends to work with industry to refine emission factors and may develop separate emission factors for E&P and non-E&P sites.

3.4. ***When are site-specific emission factors required for tank batteries?***

Site-specific emission factors may be developed and used on a voluntary basis for any tank battery. The Division reserves the authority to require site-specific emission factors at any time. Site-specific emission factors may only be applied at the tank battery for which they were developed, unless otherwise approved by the Division.

3.5. ***How is a site-specific emission factor developed?***

A site-specific emission factor for tank batteries is developed by performing a Division approved stack test. A test protocol must be submitted and approved by the Division prior to performing the test. Once a test protocol has been approved by the Division, subsequent testing may be performed following the approved protocol without submittal to the Division.

The Division must be notified of the site specific testing at least 30-days prior to the actual test date.

Emission Factor Determination for Produced Water Storage Tanks

TCEQ Project 2010-29

Prepared for:
Texas Commission on Environmental Quality
Austin, Texas

Prepared by:
ENVIRON International Corporation
Novato, California

Date:
August 2010

ENVIRON Project Number:
06-17477T

Executive Summary

The overall purpose of this Study is to evaluate volatile organic compounds (VOC), speciated VOC and hazardous air pollutant (HAP) emissions from produced water and/or saltwater storage tanks servicing oil and gas wells and to develop appropriate VOC and HAP emission factors. The emission factors are to be used for emission inventory development purposes.

The primary source of information for this study was testing conducted by the Texas Commission on Environmental Quality (TCEQ) under Work Order 522-7-84005-FY10-25, *Upstream Oil & Gas Tank Measurements*, TCEQ Project 2010-39. As part of this referenced testing project, pressurized produced water samples were taken at seven different tank batteries located in Johnson, Wise and Tarrant Counties, Texas (all part of the Eastern Barnett Shale region) and analyzed for flash gas volume and composition. The sample collection and analysis conducted as part of TCEQ Project 2010-39 was done according to strict sampling and quality assurance procedures. In addition to TCEQ Project 2010-39 data, a thorough review of publically-available information sources identified a limited amount of data on produced water emissions. This was supplemented by data provided by two natural gas producers and one petroleum engineering services company. Other than TCEQ Project 2010-39 data, however, it could not be confirmed that any of the data had undergone a rigorous quality assurance process and therefore is considered secondary data, used to support conclusions drawn using the primary data but not used directly in deriving the produced water emission factors.

Emissions from produced water storage tanks consist of flash emissions, working losses and breathing losses. Flash emissions are determined using flash gas analysis. Working and breathing losses are estimated using EPA TANKS 4.09d software. Using this approach and the assumptions detailed within this report, it is determined that working and breathing losses associated with primary data source sites are very small compared to flash emissions and can be ignored without affecting the overall emission factor determination.

Table ES-1 presents the recommended emission factors for VOC and four HAPs – benzene, toluene, ethylbenzene and xylenes – derived from the primary data source sites. For comparative purposes, average emissions from Texas and non-Texas secondary sites are also presented in Table ES-1.

Table ES-1. Recommended Emission Factors and Comparative Data

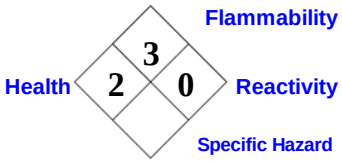
Pollutant	Average Produced Water Emission Factor by Data Set (lb/bbl)		
	Recommended Emission Factor	Secondary Data – Texas	Secondary Data – Non-Texas
VOC	0.01	0.012	0.18
Benzene	0.0001	0.0012	0.004
Toluene	0.0003	0.0012	0.009
Ethylbenzene	0.000006	0.0001	0.0007
Xylenes	0.00006	0.0003	0.006

Material Safety Data Sheet

Section 1. Chemical Product and Company Identification

Product Name	**CGO49 CORROSION INHIBITOR**	**Code**	CGO49
Supplier	Baker Petrolite A Baker Hughes Company 12645 W. Airport Blvd. (77478) P.O. Box 5050 Sugar Land, TX 77487-5050 For Product Information/MSDSs Call: 800-231-3606 (8:00 a.m. - 5:00 p.m. cst, Monday - Friday) 281-276-5400	**Version**	4.0
Material Uses	Corrosion Inhibitor	**Effective Date**	**6/10/2004**
24 Hour Emergency Numbers	CHEMTREC 800-424-9300 (U.S. 24 hour) Baker Petrolite 800-231-3606 (001)281-276-5400 CANUTEC 613-996-6666 (Canada 24 hours) CHEMTREC Int'l 01-703-527-3887 (International 24 hour)	**Print Date**	6/10/2004

National Fire Protection Association (U.S.A.)



Section 2. Composition and Information on Ingredients

Name	CAS #	% by Weight	Exposure Limits
1-Dodecanethiol	112-55-0	0.1-1	**ACGIH TLV (United States, 2004). Sensitizer skin** TWA: 0.1 ppm 8 hour(s).
Light aromatic naphtha	64742-95-6	10-30	Not available.
1,2,4-Trimethylbenzene	95-63-6	10-30	Not available.
1,2,3-Trimethylbenzene	526-73-8	1-5	Not available.
1,3,5-Trimethylbenzene	108-67-8	5-10	Not available.
Xylene	1330-20-7	1-5	**ACGIH (United States).** TWA: 434 mg/m^3 STEL: 651 mg/m^3 TWA: 100 ppm STEL: 150 ppm **OSHA (United States).** TWA: 100 ppm STEL: 150 ppm TWA: 435 mg/m^3 STEL: 655 mg/m^3
Methanol	67-56-1	10-30	**ACGIH (United States). Skin** TWA: 262 mg/m^3 8 hour(s). STEL: 328 mg/m^3 15 minute(s). TWA: 200 ppm 8 hour(s). STEL: 250 ppm 15 minute(s).

Continued on Next Page

			OSHA (United States). Skin TWA: 200 ppm 8 hour(s). STEL: 250 ppm 15 minute(s). TWA: 260 mg/m^3 8 hour(s). STEL: 325 mg/m^3 15 minute(s).

While 1,2,4-trimethylbenzene does not have exposure limits, trimethylbenzene (mixed isomers)(CAS No. 25551-13-7) has TWA value of 25 ppm for both ACGIH and OSHA (revoked limit).

Section 3. Hazards Identification

Physical State and Appearance
State: Liquid., Color: Light Amber., Odor: Mercaptan.

CERCLA Reportable Quantity
Xylene 1007 gal.
Methanol 2586 gal.

Hazard Summary
WARNING. May cause chronic effects. Flammable liquid. Vapors can form an ignitable or explosive mixture with air. Can form explosive mixtures at temperatures at or above the flash point. Vapors can flow along surfaces to a distant ignition source and flash back. Static discharges can cause ignition or explosion when container is not bonded. May be irritating to eyes, skin and respiratory tract. May be toxic by skin absorption. May cause central nervous system (CNS) effects if inhaled.

Routes of Exposure
Skin (Permeator), Skin (Contact), Eyes, Inhalation.

Potential Acute Health Effects

Eyes May be severely irritating to the eyes.

Skin May be severely irritating to the skin. May cause burns on prolonged contact. May be toxic if absorbed through the skin.

Inhalation May cause central nervous system (CNS) effects if inhaled. May be severely irritating to the lungs.

Ingestion Not considered a likely route of exposure, however, may be toxic if swallowed.

Medical Conditions aggravated by Exposure
Exposure to this product may aggravate medical conditions involving the following: blood system, kidneys, nervous system, liver, gastrointestinal tract, respiratory tract, skin/epithelium, eyes.

See Toxicological Information (section 11)

Additional Hazard Identification Remarks
May be harmful if ingested. This product may be aspirated into the lungs during swallowing or vomiting of swallowed material. Aspiration into the lungs may produce chemical pneumonitis, pulmonary edema, and hemorrhaging. Repeated or prolonged contact may cause dermatitis (inflammation) and defatting of the skin (dryness). Draize Test Eye (Rabbit): Moderate Irritant. Draize Test Skin (Rabbit): Extreme Irritant.

Section 4. First Aid Measures

Eye Contact
Flush eyes with plenty of water for 15 minutes, occasionally lifting upper and lower eyelids. Get medical attention immediately.

Skin Contact
Remove contaminated clothing and shoes immediately. Wash affected area with soap and mild detergent and large amounts of lukewarm, gently flowing water until no evidence of chemical remains (for at least 20-60 minutes). Get medical attention if irritation occurs.

Inhalation
Remove to fresh air. Oxygen may be administered if breathing is difficult. If not breathing, administer artificial respiration and seek medical attention. Get medical attention if symptoms appear.

Continued on Next Page

Ingestion	Get medical attention immediately. If swallowed, do not induce vomiting unless directed to do so by medical personnel. Wash out mouth with water if person is conscious. Never induce vomiting or give anything by mouth to a victim who is unconscious or having convulsions.
Notes to Physician	Not available.
Additional First Aid Remarks	Not available.

Section 5. Fire Fighting Measures

Flammability of the Product	Flammable liquid. Vapors can form an ignitable or explosive mixture with air. Can form explosive mixtures at temperatures at or above the flash point. Vapors can flow along surfaces to a distant ignition source and flash back. Static discharges can cause ignition or explosion when container is not bonded.
OSHA Flammability Class	IB
Autoignition temperature	Not available.
Flash Points	Closed cup: 11°C (51.8°F). (SFCC)
Flammable Limits	L.E.L. Not available. U.E.L. Not available.
Products of Combustion	These products are carbon oxides (CO, CO2) nitrogen oxides (NO, NO2...) Sulfur oxides (SO2, SO3...).
Fire Hazards in Presence of Various Substances	Open Flames/Sparks/Static. Heat.
Fire Fighting Media and Instructions	In case of fire, use foam, dry chemicals, or CO2 fire extinguishers. Evacuate area and fight fire from a safe distance. Water spray may be used to keep fire-exposed containers cool. Keep water run off out of sewers and public waterways. Note that flammable vapors may form an ignitable mixture with air. Vapors may travel considerable distances and flash back if ignited.
Protective Clothing (Fire)	Do not enter fire area without proper personal protective equipment, including NIOSH approved self-contained breathing apparatus.
Special Remarks on Fire Hazards	Not available.

Section 6. Accidental Release Measures

Spill	Put on appropriate personal protective equipment. Keep personnel removed and upwind of spill. Shut off all ignition sources; no flares, smoking, or flames in hazard area. Approach release from upwind. Shut off leak if it can be done safely. Contain spilled material. Keep out of waterways. Dike large spills and use a non-sparking or explosion-proof means to transfer material to an appropriate container for disposal. For small spills add absorbent (soil may be used in the absence of other suitable materials) scoop up material and place in a sealed, liquid-proof container. Note that flammable vapors may form an ignitable mixture with air. Vapors may travel considerable distances from spill and flash back, if ignited. Waste must be disposed of in accordance with federal, state and local environmental control regulations.
Other Statements	If RQ (Reportable Quantity) is exceeded, report to National Spill Response Office at 1-800-424-8802.
Additional Accidental Release Measures Remarks	Not available.

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Section 7. Handling and Storage

Handling and Storage	Put on appropriate personal protective equipment. Avoid contact with eyes, skin, and clothing. Avoid breathing vapors or spray mists. Use only with adequate ventilation. Store in a dry, cool and well ventilated area. Keep away from heat, sparks and flame. Keep away from incompatibles. Keep container tightly closed and dry. To avoid fire or explosion, ground container equipment and personnel before handling product.
Additional Handling and Storage Remarks	Not available.

Section 8. Exposure Controls/Personal Protection

Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors or particles below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection

Personal Protective Equipment recommendations are based on anticipated known manufacturing and use conditions. These conditions are expected to result in only incidental exposure. A thorough review of the job tasks and conditions by a safety professional is recommended to determine the level of personal protective equipment appropriate for these job tasks and conditions.

Eyes	Chemical safety goggles.
Body	Wear long sleeves to prevent repeated or prolonged skin contact.
Respiratory	Respirator use is not expected to be necessary under normal conditions of use. In poorly ventilated areas, emergency situations or if exposure levels are exceeded, use NIOSH approved full face respirator.
Hands	Chemical resistant gloves.
Feet	Chemical resistant boots or overshoes.
Other information	Nitrile or neoprene gloves.

Additional Exposure Control Remarks	Not available.

Section 9. Typical Physical and Chemical Properties

Physical State and Appearance	Liquid.	**Odor**	Mercaptan.
pH	Not available.	**Color**	Light Amber.
Specific gravity	0.854 - 0.866 @ 16°C (60°F)		
Density	7.11 - 7.21 lbs/gal @ 16°C (60°F)		
Vapor Density	>1 (Air = 1)		
Vapor Pressure	142.2 - mmHg @ 22°C (72°F)		
Evaporation Rate	Not Available or Not Applicable for Solids.		
VOC	Not available.		
Viscosity	7 - 8 cps @ 16°C (61°F)		
Pour Point	-40ºC (-40ºF)		
Solubility (Water)	Dispersible		
Boiling Point	Not available.		
Physical Chemical Comments	Not available.		

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Section 10. Stability and Reactivity

Stability and Reactivity	The product is stable.
Conditions of Instability	Not available.
Incompatibility with Various Substances	Oxidizing material.
Hazardous Decomposition Products	Not applicable.
Hazardous Polymerization	Hazardous polymerization is not expected to occur.
Special Stability & Reactivity Remarks	Not available.

Section 11. Toxicological Information

Component Toxicological Information

Acute Animal Toxicity

1-Dodecanethiol	Not available.
Light aromatic naphtha	ORAL (LD50): Acute: 2900 mg/kg [Rat]. 8400 mg/kg [Rat].
1,2,4-Trimethylbenzene	ORAL (LD50): Acute: 5000 mg/kg [Rat]. VAPOR (LC50): Acute: 18000 mg/m^3 4 hour(s) [Rat].
1,2,3-Trimethylbenzene	Not available.
1,3,5-Trimethylbenzene	VAPOR (LC50): Acute: 24000 mg/m^3 4 hour(s) [Rat].
Xylene	ORAL (LD50): Acute: 4300 mg/kg [Rat]. 3523 mg/kg [Male rat]. DERMAL (LD50): Acute: >1700 mg/kg [Rabbit]. VAPOR (LC50): Acute: 5000 ppm 4 hour(s) [Rat].
Methanol	ORAL (LD50): Acute: 5628 mg/kg [Rat]. 7300 mg/kg [Mouse]. DERMAL (LD50): Acute: 15800 mg/kg [Rabbit]. VAPOR (LC50): Acute: 64000 ppm 4 hour(s) [Rat].

Chronic Toxicity Data

1) 1-Dodecanethiol

1-Dodecanetriol is a component of this product. Workers exposed to a mixture of 1-dodecanethiol with polychloroprene latexes have shown a significant increase in frequency of chromosomal aberrations in the peripheral blood. [HSDB]

2) Light aromatic naphtha

Solvent naphtha (petroleum), light aromatic is a component of this product. Solvent naphtha (petroleum), light aromatic may cause damage to the peripheral nerves, resulting in numbness or tingling of the extremities with chronic (long term) exposure to high concentrations. (Micromedex) Rats exposed for 4 months to 1700 ppm of a solvent similar to this product showed evidence of mild damage to the liver, lungs and kidneys. These effects were not seen in rats exposed for one year to 350 ppm of another similar solvent. Rats exposed to vapors of a similar solvent during pregnancy showed embryo/fetotoxicity at concentrations producing maternal toxicity.

Continued on Next Page

In response to a TSCA test rule, several studies of a solvent similar to this product were completed. Mutagenicity studies and a rat inhalation neurotoxicity study were negative. In a mouse developmental effects study, reduced fetal body weight was seen but no teratogenicity. A rat reproductive effects study demonstrated toxicity but little effect on reproductive parameters. (Vendor MSDS)

3) 1,2,4-Trimethylbenzene

Not available.

4) 1,2,3-Trimethylbenzene

Not available.

5) 1,3,5-Trimethylbenzene

1,3,5-Trimethylbenzene (Mysitylene) is a component of this product. Chronic asthmatic-like bronchitis may be a delayed chronic hazard (EPA, 1985; Laham, 1987; HSDB, 1997). Nervousness, tension, and anxiety have been noted in chronically exposed workers with exposure to a mixture of solvents including mesitylene (HSDB, 1997). Elevated alkaline phosphates and SGOT(liver enzymes) levels have been noted in chronic animal inhalation studies (Clayton & Clayton, 1994). These effects have not been reported in exposed humans. (Reprotext)

Thrombocytopenia (a lack of platelets in the blood) with bleeding from the gums and nose and mild anemia may occur with chronic exposure to mesitylene as a component of the commercial solvent mixture, "Fleet-X-DV-99" (Plunkett, 1976; Finkel, 1983; HSDB, 1997). Coagulation (clotting of the blood) times were delayed by about 40% in a group of workers chronically exposed to a mixture of solvents containing about 30% mesitylene (Laham, 1987). These hematological disorders may have been due to a contaminant, such as benzene (Hathaway et al, 1996). Thrombocytosis (an increase of platelets in the blood) and thrombocytopenia have been noted in rabbits (Clayton & Clayton, 1994). (Reprotext)

1,3,5-Trimethylbenzene has been positive in a mutagenicity assay (Lewis, 1992). (Reprotext)

6) Xylene

Xylene (mixed isomers) is a component of this product. Effects of chronic exposure to xylene are similar to those of acute exposure, but may be more severe. Chronic inhalation reportedly was associated with headache, tremors, apprehension, memory loss, weakness, dizziness, loss of appetite, nausea, ringing in the ears, irritability, thirst, anemia, mucosal bleeding, enlarged liver, and hyperplasia, but not destruction of the bone marrow (Clayton & Clayton, 1994; ILO, 1983). Some earlier reports of effects of chronic exposure to xylene have been questioned, as exposures were not limited to xylene alone.

Effects on the blood have been reported from chronic exposure to as little as 50 mg/m3 (Pap & Varga, 1987). Repeated exposure can damage bone marrow, causing low blood cell count and can damage the liver and kidneys (NJ Department of Health, Hazardous Substance Fact Sheet). Chronic xylene exposure (usually mixed with other solvents) has produced irreversible damage to the CNS (ILO, 1983). CNS effects may be exacerbated by ethanol abuse (Savolainen, 1980). Xylene may damage hearing or enhance sensitivity to noise in chronic occupational exposures (Morata et al, 1994), probably from neurotoxic mechanism. Tolerance to xylene can occur over the work week and disappear over the weekend. (ACGIH, 1992).

Inhalation exposure has produced fetotoxicity and postnatal developmental toxicity in laboratory animals. (API, 1978, Kensington, MD, EPA/OTS Document No. 878210350 and Hass, U., et al, 1995, Neurotoxicology and Teratology 17: 341-349 and 1997, Neurotoxicology 18: 547-552)

7) Methanol

Methanol is a component of this product. Because methanol is eliminated from the body more slowly than ethanol, it can have cumulative toxicity with repeated exposures (ACGIH, 1992).

Acute dermal, oral, and inhalation exposure to methanol can cause optic nerve effects, diminished vision, and brain effects (necrosis and hemorrhaging). (Bennett, I.L. et al, 1953)

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Ingestion of methanol can cause Central Nervous System depression, blurred vision and blindness, and gastrointestinal effects. (Clayton, G.D. and Clayton, F.E., 1982, Patty's Industrial Hygiene and Toxicology, Vol2C) Dermal exposure to methanol can cause Central Nervous System depression, blurred vision, and gastrointestinal effects. (Downie, A et al, 1992, Occupational Medicine, 42, pp 47-9) Chronic inhalation of methanol can cause Central Nervous System depression, blurred vision, and gastrointestinal effects. (Frederick, L.J. et al, 1984, AIHA Journal, 45, pp 51-5)

Methanol has produced in vivo mutagenicity in animal studies. (Pereira, M.A. et al, 1982) and (Ward, J. B. et al, 1983)

Methanol was mutagenic in yeast (RTECS). Methanol has caused chromosome aberrations in yeast (RTECS) and grasshoppers (Saha & Khudabaksh, 1974).

Methanol has caused birth defects in rats exposed by the oral (Infurna et al, 1981) and inhalation (Nelson et al, 1984; Nelson et al, 1985) routes. Exencephaly (a defect in the skull bone structure that leaves the brain exposed) and cleft palate (a fissure or unformed bone structure in the roof of the mouth (palate), lip, or facial area, occurring during the embryonic stage of development) were increased in fetal mice exposed to methanol at an airborne concentration of 5,000 ppm or higher for 7 hours/day on days 6 to 15 of gestation.

Embryotoxicity and fetotoxicity were seen with maternal exposure to airborne concentrations of 7,500 ppm and above, and reduced fetal weights with concentrations of 10,000 ppm or greater. The NOAEL was 1,000 ppm. Effects similar to those seen in the 10,000 ppm dosage group were also seen in offspring of mice given a dose of 4 g/kg orally (Rogers et al, 1993).

Product Toxicological Information	
Acute Animal Toxicity	ORAL (LD50): Acute: 10600 mg/kg [Rat]. DERMAL (LD50): Acute: >2000 mg/kg [Rabbit].
Target Organs	blood system, kidneys, nervous system, liver, gastrointestinal tract, respiratory tract, skin/epithelium, eyes.
Other Adverse Effects	Not available.

Section 12. Ecological Information

Ecotoxicity	Not available.
BOD5 and COD	Not available.
Biodegradable/OECD	Not available.
Toxicity of the Products of Biodegradation	Not available.
Special Remarks	Not available.

Section 13. Disposal Considerations

Responsibility for proper waste disposal rests with the generator of the waste. Dispose of any waste material in accordance with all applicable federal, state and local regulations. Note that these regulations may also apply to empty containers, liners and rinsate. Processing, use, dilution or contamination of this product may cause its physical and chemical properties to change.

Additional Waste Remarks	Not available.

Continued on Next Page

Section 14. Transport Information

DOT Classification	FLAMMABLE LIQUID, N.O.S. (Contains: Methanol, Light aromatic naphtha), 3, UN1993, II	
DOT Reportable Quantity	Xylene 1007 gal. Methanol 2586 gal.	
Marine Pollutant	Not applicable.	
Additional DOT information	Not available.	
Emergency Response Guide Page Number	128	

Section 15. Regulatory Information

HCS Classification	Target organ effects. Flammable liquid. Irritant.
U.S. Federal Regulations	
Environmental Regulations	Extremely Hazardous Substances: Not applicable to any components in this product. SARA 313 Toxic Chemical Notification and Release Reporting: 1,2,4-Trimethylbenzene; Xylene; Methanol; SARA 302/304 Emergency Planning and Notification substances: Not applicable to any components in this product. Hazardous Substances (CERCLA 302): Xylene 1007 gal.; Methanol 2586 gal.; SARA 311/312 MSDS distribution - chemical inventory - hazard identification: fire; immediate health hazard; delayed health hazard; Clean Water Act (CWA) 307 Priority Pollutants: Not applicable to any components in this product. Clean Water Act (CWA) 311 Hazardous Substances: Xylene; Clean Air Act (CAA) 112(r) Accidental Release Prevention Substances: Not applicable to any components in this product.
Threshold Planning Quantity (TPQ)	Not applicable.
TSCA Inventory Status	All components are included or are exempted from listing on the US Toxic Substances Control Act Inventory. This product contains the following components that are subject to the reporting requirements of TSCA Section 12(b) if exported from the United States: Xylene; Naphthalene.
State Regulations	State specific information is available upon request from Baker Petrolite.
International Regulations	
Canada	Not all components are included on the Canadian Domestic Substances List.
WHMIS (Canada)	B-2, D-1B, D-2A, D-2B
European Union	Not all components are included on the European Inventory of Existing Commercial Chemical Substances or the European List of Notified Chemical Substances.

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Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME	Bactron® K-87 Microbiocide
PRODUCT USE	Biocide
COMPANY MAILING ADDRESS	Champion Technologies, Inc. P.O. Box 450499 Houston, TX, 77245 USA
EMERGENCY TELEPHONE NUMBERS 24 HRS.	1-800-424-9300 (CHEMTREC) 1-703-527-3887 (CHEMTREC - International) 1-613-996-6666 (CANUTEC - Canada) 1-281-431-2561 (Champion)

2. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE	CAS-NO.	WEIGHT %
Glutaraldehyde	111-30-8	10.0 - 30.0
Alkyl dimethyl ethylbenzyl ammonium chloride (68%C12, 32%C14)	85409-23-0	5.0 - 10.0
Quaternary ammonium compounds, benzyl-C12-18-alkyldimethyl, chlorides	68391-01-5	5.0 - 10.0
Ethanol	64-17-5	0.1 - 1.0

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW
DANGER!

APPEARANCE & ODOR	Clear Colorless, Liquid , Sharp Acrid
HEALTH HAZARDS	Toxic, Corrosive, May cause sensitization by inhalation., May cause sensitization by skin contact.
PHYSICAL HAZARDS	This product is not expected to be a fire hazard.

HEALTH HAZARDS

SKIN	Causes burns. May cause sensitization by skin contact.
EYE	Causes burns.
INHALATION	Causes burns. Toxic by inhalation. May cause sensitization by inhalation.
INGESTION	Causes burns. Harmful if swallowed.
POTENTIAL ENVIRONMENTAL EFFECTS	Prevent product from entering drains (waterways).

4. FIRST AID MEASURES

SKIN	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Call a physician immediately.
EYE	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician immediately.
INHALATION	Move to fresh air. Call a physician immediately. Give artificial respiration if not breathing.
INGESTION	Call a physician immediately. Immediately give large quantities of water to drink. Never give anything by mouth to an unconscious person.

5. FIRE-FIGHTING MEASURES

FLASH POINT	> 200 °F (> 93 °C) PMCC
EXTINGUISHING MEDIA	Water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
SPECIAL HAZARDS	Vapors are heavier than air and may travel considerable distance along the ground or be moved by ventilation to ignition sources. Empty product containers may contain product residue. Do not pressurize, cut, heat, weld or expose containers to flame or other sources of ignition.
SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS	Wear positive-pressure self-contained breathing apparatus (SCBA) and full protective fire fighting gear. Equipment should be thoroughly decontaminated after use.
HAZARDOUS COMBUSTION PRODUCTS	Combustion products may include carbon monoxide, carbon dioxide and nitrogen oxides.
FIRE FIGHTING / FURTHER ADVICE	Evacuate area and fight fire from safe distance. Use water spray to cool fire exposed structures and to protect personnel. Shut off source of flow if possible. If a leak or spill has not ignited, use water spray to disperse the vapors.

6. ACCIDENTAL RELEASE MEASURES

CLEAN UP METHODS	Eliminate all ignition sources. No flares, smoking or flames in hazard area. Stop leak if you can do it without risk. Liquids may need to be neutralized before collection begins. Take up spill with sand or other noncombustible absorbent material and place in containers for later disposal. Always wear proper personal protective equipment when addressing spill or leak.
ENVIRONMENTAL PRECAUTIONS	Prevent product from entering drains (waterways).

7. HANDLING AND STORAGE

GENERAL PRECAUTIONS	Handle in accordance with good industrial hygiene and safety practices. These practices include avoiding unnecessary exposure and removal of material from eyes, skin and clothing. Wash thoroughly after handling. Avoid breathing vapor. Use only with adequate ventilation. Keep away from heat and sources of ignition. Take precautionary measures against static discharges.
STORAGE	Keep container closed when not in use. Store in cool, dry place.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS

NAME	SOURCE	TYPE	PPM	MG/M3	NOTATION
Glutaraldehyde	ACGIH	Ceiling	0.05		
	NIOSH	Ceiling	0.2	0.8	
Ethanol	ACGIH	TWA	1,000		
	NIOSH	REL	1,000	1,900	
	OSHA	PEL	1,000	1,900	

*** = Can be absorbed through the skin.**

ENGINEERING MEASURES Provide general and/or local exhaust ventilation, process enclosures or other engineering controls to control airborne levels below exposure guidelines.

RESPIRATORY PROTECTION When respiratory protection is required, use an approved air purifying respirator or positive-pressure supplied-air respirator depending on potential airborne concentration.

HAND PROTECTION Wear chemical-resistant gloves to prevent skin contact. Glove/protective clothing suppliers can provide recommendations for your specific applications. Wash immediately if skin is contaminated. Good personal hygiene practices such as properly handling contaminated clothing, using wash facilities before eating, drinking or smoking are essential for preventing personal chemical contamination. Contaminated gloves should be replaced.

EYE PROTECTION Use chemical splash goggles, safety glasses and/or face shield. An emergency eye wash fountain should be located in immediate work area.

BODY PROTECTION A safety shower should be located in the immediate work area. Remove contaminated clothing, wash skin with soap and water and launder clothing before reuse or dispose of properly.

9. PHYSICAL AND CHEMICAL PROPERTIES

FORM	Liquid
COLOR	Clear Colorless
ODOR	Sharp Acrid
ODOR THRESHOLD	Not available
BOILING POINT	Not available
POUR POINT	15 °F (-9 °C)
FLASH POINT	> 200 °F (> 93 °C) PMCC
LOWER EXPLOSION LIMIT	Not available
UPPER EXPLOSION LIMIT	Not available
AUTOIGNITION TEMPERATURE	Not available

EVAPORATION RATE	Not available	
pH	3.5 - 5.5	
SOLUBILITY	Water	
RELATIVE VAPOR DENSITY (AIR = 1)	Not available	
SPECIFIC GRAVITY (H2O = 1)	1.0539 - 1.0839	@ 60 °F (16 °C)
VAPOR PRESSURE	Not available	
VISCOSITY	10 - 20 cPs	
PARTITION COEFFICIENT (N-OCTANOL/WATER)	Not available	

10. STABILITY AND REACTIVITY

STABILITY	Stable
CONDITIONS TO AVOID	Flames, High temperatures, Evaporation of water
MATERIALS TO AVOID	Alkalies catalyze an aldol type condensation.
HAZARDOUS DECOMPOSITION PRODUCTS	Oxides of carbon
HAZARDOUS POLYMERIZATION	Will not occur

11. TOXICOLOGICAL INFORMATION

SUBSTANCE	SOURCE	GROUP	LIST ATTRIBUTE
CARCINOGENICITY			
Glutaraldehyde	ACGIH		Sensitiser.
	ACGIH	Group A4	Not classifiable as a human carcinogen.
Ethanol	ACGIH	Group A4	Not classifiable as a human carcinogen.

SENSITIZATION

The following component(s) may cause sensitization by skin contact:

Glutaraldehyde

The following component(s) may cause sensitization by inhalation:

Glutaraldehyde

12. ECOLOGICAL INFORMATION

No data is available on the product itself.

13. DISPOSAL CONSIDERATIONS

ADVICE ON DISPOSAL Dispose of in accordance with local regulations.

14. TRANSPORT INFORMATION

Refer to the bill of lading or container label for DOT or other transportation hazard classification. Additionally, be aware that shipping descriptions may vary based on mode of transport, shipment volume or weight, container size or type, and/or origin and destination. Consult your company's Hazardous Materials / Dangerous Goods expert or your legal counsel for information specific to your situation.

15. REGULATORY INFORMATION

FEDERAL REGULATORY STATUS

CERCLA

SUBSTANCE	REPORTABLE QUANTITY
Ethanol	100 lbs

STATE REGULATORY STATUS

STATE RIGHT TO KNOW

NEW JERSEY RIGHT-TO-KNOW CHEMICAL LIST

Hydrochloric acid

MASSACHUSETTS RIGHT-TO-KNOW CHEMICAL LIST

Ethanol
Glutaraldehyde
Hydrochloric acid

PENNSYLVANIA RIGHT-TO-KNOW CHEMICAL LIST

Ethanol
Glutaraldehyde
Hydrochloric acid

INVENTORY STATUS

NOTIFICATION STATUS

TSCA	Listed or Exempt

16. OTHER INFORMATION

NFPA RATING

HEALTH	2
FLAMMABILITY	2
INSTABILITY	0

Prepared By:	Product Stewardship
Preparation Date:	04/16/2008

The data and information contained herein are being furnished for informational purposes only, upon the express condition that each customer shall make its own assessment of appropriate use and appropriate shipping, transfer and storage materials and procedures for Champion Technologies, Inc. products. Although based on information sources which Champion Technologies, Inc. considers accurate and reliable, Champion Technologies Inc. makes no warranty, either express or implied, including any

warranties or merchantability or fitness for a particular purpose, regarding the validity of this information, the information sources upon which the same are based, or the results to be obtained, and expressly disclaims liabilities for damages or injuries resulting from the use thereof.

Material Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Chevron Automatic Transmission Fluid MD-3

Product Use: Transmission Fluid
Product Number(s): CPS226502
Synonyms: Automatic Transmission Fluid, Chevron ATF DEXRON® III/MERCON®, DEXRON® - III, MERCON®
Company Identification
Chevron Products Company
a division of Chevron U.S.A. Inc.
6001 Bollinger Canyon Rd.
San Ramon, CA 94583
United States of America
www.chevronlubricants.com

Transportation Emergency Response
CHEMTREC: (800) 424-9300 or (703) 527-3887
Health Emergency
Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623
Product Information
email : lubemsds@chevron.com
Product Information: (800) LUBE TEK

SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	70 - 99 %wt/wt
Alkyl phosphItes	Mixture	0.1 - 1 %weight

SECTION 3 HAZARDS IDENTIFICATION

****
EMERGENCY OVERVIEW

- HARMFUL TO AQUATIC ORGANISMS. MAY CAUSE LONG-TERM ADVERSE EFFECTS IN THE AQUATIC ENVIRONMENT
****

IMMEDIATE HEALTH EFFECTS
Eye: Not expected to cause prolonged or significant eye irritation.
Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin

is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin. High-Pressure Equipment Information: Accidental high-velocity injection under the skin of materials of this type may result in serious injury. Seek medical attention at once should an accident like this occur. The initial wound at the injection site may not appear to be serious at first; but, if left untreated, could result in disfigurement or amputation of the affected part.

Ingestion: Not expected to be harmful if swallowed.
Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

SECTION 4 FIRST AID MEASURES

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.
Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.
Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.
Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.
Note to Physicians: In an accident involving high-pressure equipment, this product may be injected under the skin. Such an accident may result in a small, sometimes bloodless, puncture wound. However, because of its driving force, material injected into a fingertip can be deposited into the palm of the hand. Within 24 hours, there is usually a great deal of swelling, discoloration, and intense throbbing pain. Immediate treatment at a surgical emergency center is recommended.

SECTION 5 FIRE FIGHTING MEASURES

Leaks/ruptures in high pressure system using materials of this type can create a fire hazard when in the vicinity of ignition sources (eg. open flame, pilot lights, sparks, or electric arcs).

FIRE CLASSIFICATION:
OSHA Classification (29 CFR 1910.1200): Not classified by OSHA as flammable or combustible.

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

FLAMMABLE PROPERTIES:
Flashpoint: (Cleveland Open Cup) 178 °C (352 °F) Minimum
Autoignition: No data available
Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

PROTECTION OF FIRE FIGHTERS:
Fire Fighting Instructions: This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.
Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.
Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: DO NOT USE IN HIGH PRESSURE SYSTEMS in the vicinity of flames, sparks and hot surfaces. Use only in well ventilated areas. Keep container closed.
Keep out of the reach of children.
General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.
Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.
Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:
Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:
Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.
Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.
Respiratory Protection: No respiratory protection is normally required.
If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	ACGIH	5 mg/m3	10 mg/m3	--	--
Highly refined mineral oil (C15 - C50)	OSHA Z-1	5 mg/m3	--	--	--

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Red
Physical State: Liquid
Odor: Petroleum odor
pH: Not Applicable
Vapor Pressure: <0.01 mmHg @ 37.8 °C (100 °F)
Vapor Density (Air = 1): >1
Boiling Point: 315°C (599°F)
Solubility: Soluble in hydrocarbons; insoluble in water
Freezing Point: Not Applicable @ 15.6°C (60.1°F) / 15.6°C (60.1°F)
Density: 0.85 kg/l @ 15°C (59°F) (Typical)
Viscosity: 7 mm2/s @ 100°C (212°F) (Typical)

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Incompatibility With Other Materials: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
Hazardous Decomposition Products: None known (None expected)
Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS
Eye Irritation: The eye irritation hazard is based on evaluation of data for similar materials or product components.
Skin Irritation: The skin irritation hazard is based on evaluation of data for similar materials or product

components.
Skin Sensitization: The skin sensitization hazard is based on evaluation of data for similar materials or product components.
Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

ADDITIONAL TOXICOLOGY INFORMATION:
This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B). These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY
This material is expected to be harmful to aquatic organisms and may cause long-term adverse effects in the aquatic environment. The ecotoxicity hazard is based on an evaluation of data for the components or a similar material.

ENVIRONMENTAL FATE
Ready Biodegradability: This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material.

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: PETROLEUM LUBRICATING OIL, NOT REGULATED AS A HAZARDOUS MATERIAL FOR TRANSPORTATION UNDER 49 CFR

IMO/IMDG Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS

DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO TI OR IATA DGR

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:

1.	Immediate (Acute) Health Effects:	NO
2.	Delayed (Chronic) Health Effects:	NO
3.	Fire Hazard:	NO
4.	Sudden Release of Pressure Hazard:	NO
5.	Reactivity Hazard:	NO

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
	07=PA RTK

No components of this material were found on the regulatory lists above.

CHEMICAL INVENTORIES:
All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

NEW JERSEY RTK CLASSIFICATION:
Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Automatic transmission fluid)

WHMIS CLASSIFICATION:
This product is not considered a controlled product according to the criteria of the Canadian Controlled Products Regulations.

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 1 Flammability: 1 Reactivity: 0
(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

LABEL RECOMMENDATION:
Label Category : INDUSTRIAL OIL 1 - IND1

REVISION STATEMENT: This revision updates the following sections of this Material Safety Data Sheet: 1-16
Revision Date: AUGUST 20, 2012

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	MSDS - Material Safety Data Sheet
CVX - Chevron	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the Chevron Energy Technology Company, 100 Chevron Way, Richmond, California 94802.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Table A–1 to Subpart A of Part 98—Global Warming Potentials

[100-Year Time Horizon]

Name	CAS No.	Chemical formula	Global warming potential (100 yr.)
Carbon dioxide	124–38–9	CO_2	1
Methane	74–82–8	CH_4	[a] 25
Nitrous oxide	10024–97–2	N_2O	[a] 298
HFC–23	75–46–7	CHF_3	[a] 14,800
HFC–32	75–10–5	CH_2F_2	[a] 675
HFC–41	593–53–3	CH_3F	[a] 92
HFC–125	354–33–6	C_2HF_5	[a] 3,500
HFC–134	359–35–3	$C_2H_2F_4$	[a] 1,100
HFC–134a	811–97–2	CH_2FCF_3	[a] 1,430
HFC–143	430–66–0	$C_2H_3F_3$	[a] 353
HFC–143a	420–46–2	$C_2H_3F_3$	[a] 4,470
HFC–152	624–72–6	CH_2FCH_2F	53
HFC–152a	75–37–6	CH_3CHF_2	[a] 124
HFC–161	353–36–6	CH_3CH_2F	12
HFC–227ea	431–89–0	C_3HF_7	[a] 3,220
HFC–236cb	677–56–5	$CH_2FCF_2CF_3$	1,340
HFC–236ea	431–63–0	CHF_2CHFCF_3	1,370
HFC–236fa	690–39–1	$C_3H_2F_6$	[a] 9,810
HFC–245ca	679–86–7	$C_3H_3F_5$	[a] 693
HFC–245fa	460–73–1	$CHF_2CH_2CF_3$	1,030
HFC–365mfc	406–58–6	$CH_3CF_2CH_2CF_3$	794
HFC–43–10mee	138495–42–8	$CF_3CFHCFHCF_2CF_3$	[a] 1,640
Sulfur hexafluoride	2551–62–4	SF_6	[a] 22,800
Trifluoromethyl sulphur pentafluoride	373–80–8	SF_5CF_3	17,700
Nitrogen trifluoride	7783–54–2	NF_3	17,200
PFC–14 (Perfluoromethane)	75–73–0	CF_4	7,390
PFC–116 (Perfluoroethane)	76–16–4	C_2F_6	[a] 12,200
PFC–218 (Perfluoropropane)	76–19–7	C_3F_8	[a] 8,830

Name	CAS No.	Chemical formula	Global warming potential (100 yr.)
Perfluorocyclopropane	931–91–9	$C\text{-}C_3F_6$	17,340
PFC–3–1–10 (Perfluorobutane)	355–25–9	C_4F_{10}	[a] 8,860
Perfluorocyclobutane	115–25–3	$C\text{-}C_4F_8$	[a] 10,300
PFC–4–1–12 (Perfluoropentane)	678–26–2	C_5F_{12}	[a] 9,160
PFC–5–1–14 (Perfluorohexane)	355–42–0	C_6F_{14}	[a] 9,300
PFC–9–1–18	306–94–5	$C_{10}F_{18}$	7,500
HCFE–235da2 (Isoflurane)	26675–46–7	$CHF_2OCHClCF_3$	350
HFE–43–10pccc (H–Galden 1040x)	E1730133	$CHF_2OCF_2OC_2F_4OCHF_2$	1,870
HFE–125	3822–68–2	CHF_2OCF_3	14,900
HFE–134	1691–17–4	CHF_2OCHF_2	6,320
HFE–143a	421–14–7	CH_3OCF_3	756
HFE–227ea	2356–62–9	$CF_3CHFOCF_3$	1,540
HFE–236ca12 (HG–10)	78522–47–1	$CHF_2OCF_2OCHF_2$	2,800
HFE–236ea2 (Desflurane)	57041–67–5	$CHF_2OCHFCF_3$	989
HFE–236fa	20193–67–3	$CF_3CH_2OCF_3$	487
HFE–245cb2	22410–44–2	$CH_3OCF_2CF_3$	708
HFE–245fa1	84011–15–4	$CHF_2CH_2OCF_3$	286
HFE–245fa2	1885–48–9	$CHF_2OCH_2CF_3$	659
HFE–254cb2	425–88–7	$CH_3OCF_2CHF_2$	359
HFE–263fb2	460–43–5	$CF_3CH_2OCH_3$	11
HFE–329mcc2	67490–36–2	$CF_3CF_2OCF_2CHF_2$	919
HFE–338mcf2	156053–88–2	$CF_3CF_2OCH_2CF_3$	552
HFE–338pcc13 (HG–01)	188690–78–0	$CHF_2OCF_2CF_2OCHF_2$	1,500
HFE–347mcc3	28523–86–6	$CH_3OCF_2CF_2CF_3$	575
HFE–347mcf2	E1730135	$CF_3CF_2OCH_2CHF_2$	374
HFE–347pcf2	406–78–0	$CHF_2CF_2OCH_2CF_3$	580
HFE–356mec3	382–34–3	$CH_3OCF_2CHFCF_3$	101
HFE–356pcc3	160620–20–2	$CH_3OCF_2CF_2CHF_2$	110
HFE–356pcf2	E1730137	$CHF_2CH_2OCF_2CHF_2$	265
HFE–356pcf3	35042–99–0	$CHF_2OCH_2CF_2CHF_2$	502

Name	CAS No.	Chemical formula	Global warming potential (100 yr.)
HFE–365mcf3	378–16–5	$CF_3CF_2CH_2OCH_3$	11
HFE–374pc2	512–51–6	$CH_3CH_2OCF_2CHF_2$	557
HFE–449sl (HFE–7100) Chemical blend	163702–07–6 163702–08–7	$C_4F_9OCH_3$ $(CF_3)_2CFCF_2OCH_3$	297
HFE–569sf2 (HFE–7200) Chemical blend	163702–05–4 163702–06–5	$C_4F_9OC_2H_5$ $(CF_3)_2CFCF_2OC_2H_5$	59
Sevoflurane	28523–86–6	$CH_2FOCH(CF_3)_2$	345
HFE–356mm1	13171–18–1	$(CF_3)_2CHOCH_3$	27
HFE–338mmz1	26103–08–2	$CHF_2OCH(CF_3)_2$	380
(Octafluorotetramethy-lene)hydroxymethyl group	NA	$X\text{-}(CF_2)_4CH(OH)\text{-}X$	73
HFE–347mmy1	22052–84–2	$CH_3OCF(CF_3)_2$	343
Bis(trifluoromethyl)-methanol	920–66–1	$(CF_3)_2CHOH$	195
2,2,3,3,3-pentafluoropropanol	422–05–9	$CF_3CF_2CH_2OH$	42
PFPMIE	NA	$CF_3OCF(CF_3)CF_2OCF_2OCF_3$	10,300

[a] The GWP for this compound is different than the GWP in the version of Table A-1 to subpart A of part 98 published on October 30, 2009.

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

Table C–1 to Subpart C—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	66.83

Fuel type	Default high heat value	Default CO_2 emission factor
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 CO2 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.

[74 FR 56374, Oct. 30, 2009, as amended at 75 FR 79153, Dec. 17, 2010; 78 FR 71950, Nov. 29, 2013]

Section 8

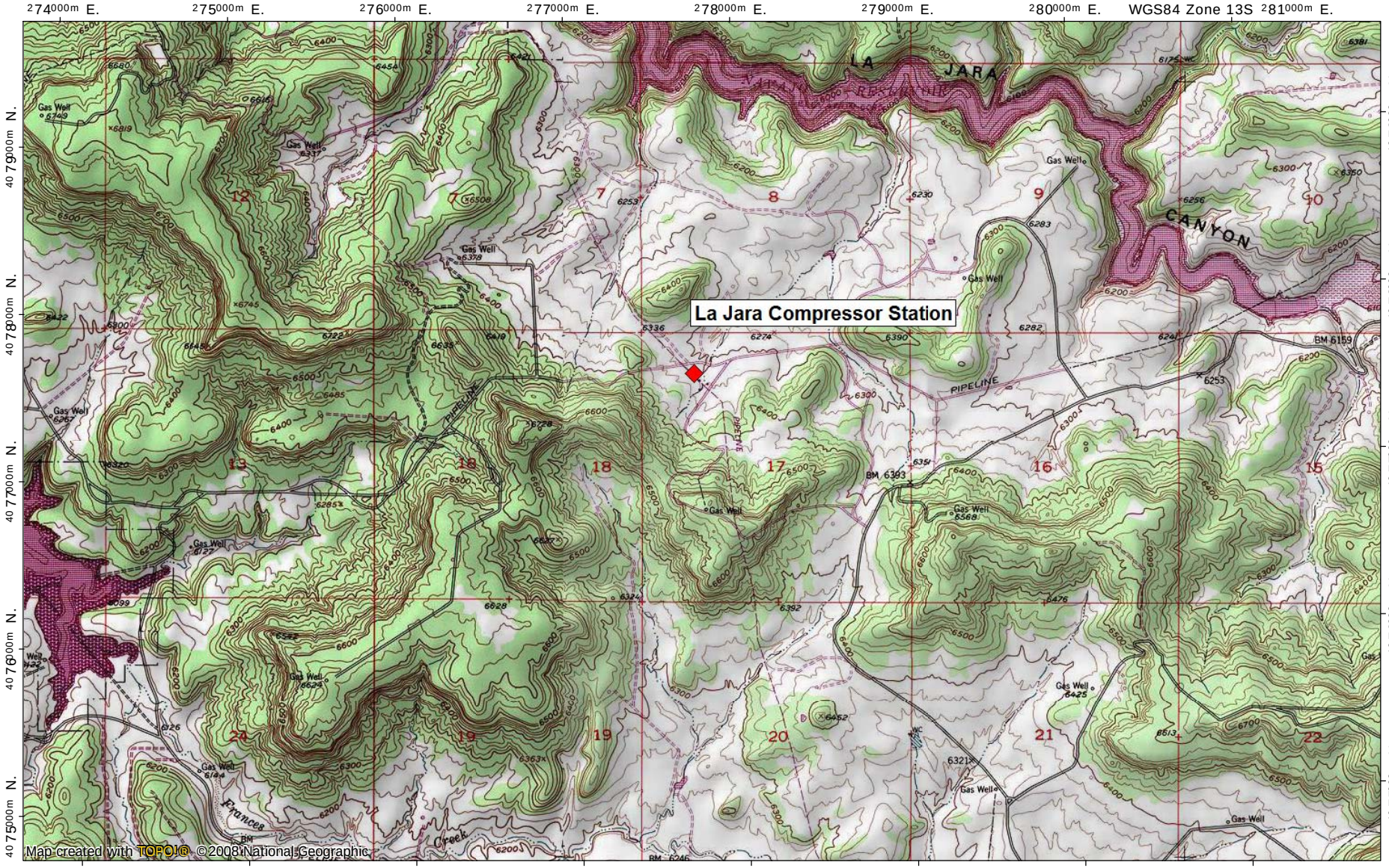
Map(s)

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	

Please see the following page(s).

HARVEST FOUR CORNERS, LLC - LA JARA COMPRESSOR STATION - Rio Arriba County, NM T 30 N, R 06 W, Section 17



0.0 0.5 1.0 miles
0.0 0.5 1.0 1.5 km

TN MN 9°

10/15/19

Section 9

Proof of Public Notice

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

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

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

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

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

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

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

Rio Arriba County is classified as a "B" county, according to the New Mexico Department of Finance and Administration (http://www.nmdfa.state.nm.us/County_Classifications.aspx). As such, according to 20.2.72.203.B(1)(b) NMAC, public notice must be provided by certified mail to the owners of record within one half (½) mile of the property on which the facility is located.

Table 1 identifies the land owners within one half (½) mile of the property on which the La Jara Compressor Station is located, that received public notice letters of the proposed permit modification.

Land owner information was obtained from the Rio Arriba County Assessor's Office 'Eagle Web' (http://eagleweb-assessor.rio-arriba.org/assessor/web/).

Table 1

Land Owners Within 1/2 Mile of the La Jara Compressor Station	
Bureau of Land Management	Gomez Family Property, LLC

20.2.72.203.B(2) NMAC requires public notice be provided by certified mail to the county in which the facility is located, and to municipalities, counties and Indian Tribes within a 10 mile radius of the property on which the facility is located.

Table 2 identifies the counties, municipalities and tribes located within ten miles of the La Jara Compressor Station that received public notice letters of the proposed permit modification.

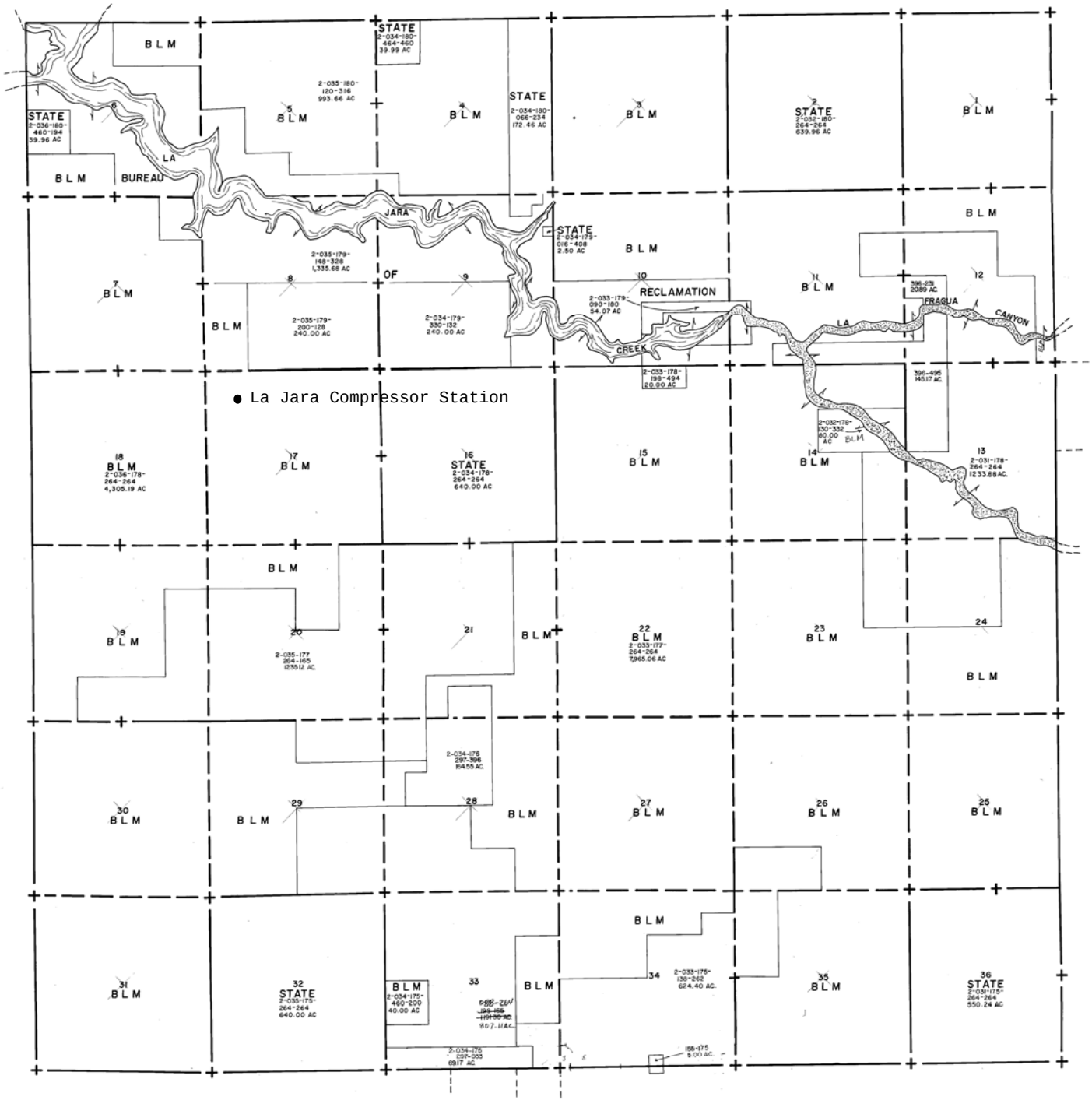
Table 2

Municipalities, Counties and Tribes Within One Half (1/2) Mile of the La Jara Compressor Station Receiving Public Notice Letters	
Counties	**Addressed to**
Rio Arriba	County Clerk
San Juan	County Clerk
Municipalities	**Addressed to**
None	Not applicable
Indian Tribes	**Addressed to**
None	Not applicable

La Jara Compressor Station

Rio Arriba County, New Mexico

Township 30N, Range 06W, Section 17



N

SCALE
1"=(APPROX.) 1320'

36	31	32	33	34	35	36	31
1	6	5	4	3	2	1	6
12	7	8	9	10	11	12	7
13	18	17	16	15	14	13	18
24	19	20	21	22	23	24	19
25	30	29	28	27	26	25	30
36	31	32	33	34	35	36	31
1	6	5	4	3	2	1	6

00-30N-06W 27

NOTE:
This map should not be used in preparing legal descriptions. Section and property lines may be unsurveyed.

DRAWN BY
CHECKED BY
DATE

PROPERTY CODE NUMBER

SECTION
TOWNSHIP 30N
RANGE 06W

PROPERTY IDENTIFICATION MAP

RIO ARRIBA COUNTY
NEW MEXICO

PREPARED FOR
RIO ARRIBA COUNTY
ASSESSORS OFFICE
BY

Western Tel-Com Services of New Mexico, Inc.
P.O. BOX 5752
Santa Fe,N.Mex.87502
(505) 988-1099

Account: R000648

Location	Owner Information	Assessment History
City	**Owner Name** BLM	**Actual Value** (2019) $25,830
Tax Area 21_NR - 21_NR	**Owner Address**	**Primary Taxable** $8,610
Parcel Number 2-036-178-264-264		Exempt ($8,610)
Legal Summary S: 00 T: 30N R: 06W S: 17 T: 30N R: 06W S: 18 T: 30N R: 06W S: 30 T: 30N R: 06W S: 31 T: 30N R: 06W S: 06 T: 30N R: 06W PORTIONS OF S: 07 T: 30N R: 06W PORTIONS OF S: 08 T: 30N R: 06W PORTIONS OF S: 19 T: 30N R: 06W PORTIONS OF S: 20 T: 30N R: 06W PORTIONS OF S: 29 T: 30N R: 06W PORTIONS OF 4,305.19 AC ALL OF SECTIONS 17,18,30, & 31 PORTION OF SECTIONS 6,7,8,19,20, & 29		**Adjusted Taxable Total** $0
		Tax Area: 21_NR **Mill Levy:** 29.373000

Type	Actual	Assessed	Acres
Exempt Land	$25,830	$8,610	4305.190

Tax History	Images

Tax Year	Taxes
*2020	$0.00
2019	$0.00

* Estimated

Account: R000655

Location	Owner Information	Assessment History
City	**Owner Name** GOMEZ FAMILY PROPERTY, LLC A NEW MEXICO LIMITED LIABILITY COMPANY	**Actual Value** (2020) $1,440
Tax Area 21_NR - 21_NR	**Owner Address** 432 PARKLAND DR AZTEC, NM 87410	**Primary Taxable** $480
Parcel Number 2-035-179-200-128		**Tax Area:** 21_NR **Mill Levy:** 29.373000
Legal Summary S: 08 T: 30N R: 06W 24-A 357-358 240.00 AC SE4,S2,SW4, LIVESTOCK ASSESSED ON P046507		

Type	Actual	Assessed	Acres
Agriculture Land	$1,440	$480	240.000

Tax History

Tax Year	Taxes
*2020	$14.08
2019	$14.08

* Estimated

Images

GIS

Rio Arriba County, New Mexico
County Assessor's Office – Eagle Web
Advanced property search result for Township 30N, Range 06W, Section 7:

Printer friendly view

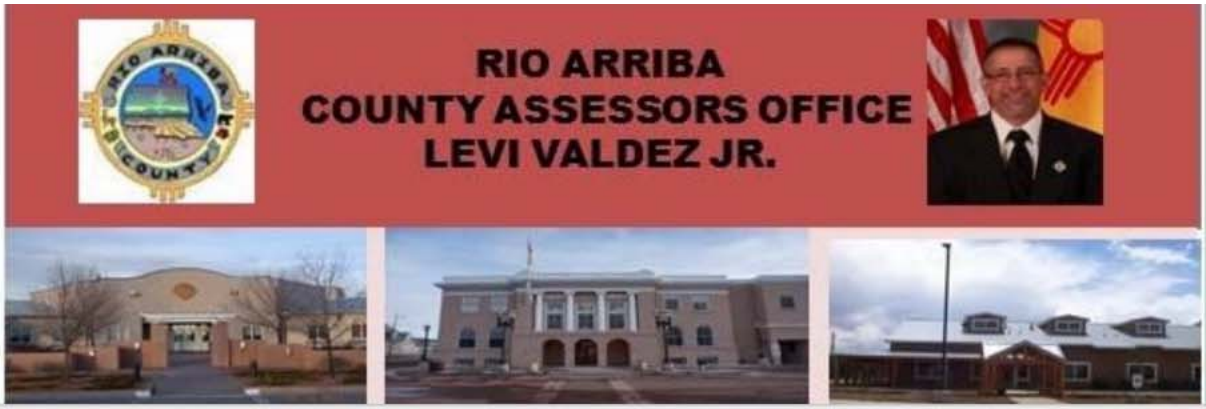
Query: Section=7 and Township=30 and Range=6

Showing 2 results on 1 page

Account#	Summary	Picture
R000648	2-036-178-264-264 BLM S: 00 T: 30N R: 06W S: 17 T: 30N R: 06W S: 18 T: 30N...	
R000649	2-035-179-148-328 BLM S: 00 T: 30N R: 06W S: 05 T: 30N R: 06W PORTIONS OF ...	

April 23, 2020

Rio Arriba County, New Mexico
County Assessor's Office – Eagle Web
Advanced property search result for Township 30N, Range 06W, Section 8:



lic

Printer friendly view

Query: Section=8 and Township=30 and Range=6

Showing 3 results on 1 page

Account#	Summary		Picture
R000648	2-036-178-264-264	BLM	S: 00 T: 30N R: 06W S: 17 T: 30N R: 06W S: 18 T: 30N...
R000649	2-035-179-148-328	BLM	S: 00 T: 30N R: 06W S: 05 T: 30N R: 06W PORTIONS OF ...
R000655	2-035-179-200-128	GOMEZ FAMILY PROPERTY, LLC A NEW MEXICO LIMITED LIABILITY COMPANY	S: 08 T: 30N R: 06W 24-A 357-358 240.00 AC...

Harvest Four Corners, LLC
1755 Arroyo Drive
Bloomfield, NM 87413
Phone: 505/632-4600
Fax: 505/209632-4782
harvestmidstream.com

CERTIFIED MAIL 7011 3500 0001 5644 4704

April 30, 2020

Gomez Family Property, LLC
A New Mexico Limited Liability Company
432 Parkland Drive
Aztec, NM 87410

Dear Madam or Sir,

Harvest Four Corners, LLC (HFC) announces its application to the New Mexico Environment Department (NMED) for an air quality permit modification for its natural gas gathering and compression station known as the **La Jara Compressor Station**. The expected date of application submittal to the Air Quality Bureau is on or near May 4, 2020.

The exact location of the facility is latitude 36° 49' 02" latitude and -107° 29' 32" longitude, approximately 3.4 miles north-northwest of the intersection of NM 527 and Co. Rd. 362, in Rio Arriba County.

The following permit modifications are proposed:

- The option, at Harvest's discretion, to replace either one (1), two (2), or none of its Solar Centaur T4002 combustion turbines with an upgraded 40-4702S turbine model. If implemented, the facility-wide Potential To Emit (PTE) of nitrogen oxides (NO_X) and carbon monoxide (CO) will decrease;

- Remove emission limits for an exempt natural gas fired emergency generator;

- Align the permitted allowable fuel sulfur in the natural gas combusted at the facility with the sulfur dioxide (SO_2) emission limit by increasing it from 0.2 grains per 100 standard cubic feet (gr/100 scf) to 1.35 gr/100 scf;

- Increase the allowed annual condensate liquid throughput and separator inlet pressure, and simultaneously decrease the allowable volatile organic compounds (VOC) emissions.

The worst-case estimated maximum quantities of any regulated air contaminant are presented below in pound per hour (pph) and tons per year (tpy), and may change slightly during the course of the Department's review:

Pollutant:	Pounds per hour	Tons per year
Nitrogen Oxides (NO_X)	74.2	273
Carbon Monoxide (CO)	50.9	187
Volatile Organic Compounds (VOC) *	89.6	169
Sulfur Dioxide (SO_2)	0.61	2.7
Particulate Matter (PM)	1.3	5.2
Particulate Matter less than 10 um diameter (PM_{10})	1.3	5.2
Particulate Matter less than 2.5 um diameter ($PM_{2.5}$)	1.3	5.2

Pollutant:	Pounds per hour	Tons per year
Total sum of all Hazardous Air Pollutants (HAPs)	16.8	15.6
Green House Gas Emissions as Total CO_2e	n/a	125,723

* The current facility-wide permitted VOC emissions are 310.4 tpy. The emission rates shown above reflect the worst-case updated PTE calculation.

The standard and maximum operating schedule of the facility will continue to be from midnight to midnight (24 hours a day), seven days a week, 52 weeks a year.

The owner/operator of the facility is Harvest Four Corners LLC, 1755 Arroyo Drive, Bloomfield, New Mexico, 87413.

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.

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

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.

Sincerely,

Lisa Killion for

Kijun Hong
Environmental Specialist

Harvest Four Corners LLC
1755 Arroyo Drive
Bloomfield, NM 87413

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.

Harvest Four Corners, LLC
1755 Arroyo Drive
Bloomfield, NM 87413
Phone: 505/632-4600
Fax: 505/209632-4782
harvestmidstream.com

CERTIFIED MAIL 7011 3500 0001 5644 4681

April 30, 2020

County Clerk
Rio Arriba County
P.O. Box 158
Tierra Amarilla, NM 87575

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Sincerely,

Livia Killion for

Kijun Hong
Environmental Specialist

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Bloomfield, NM 87413

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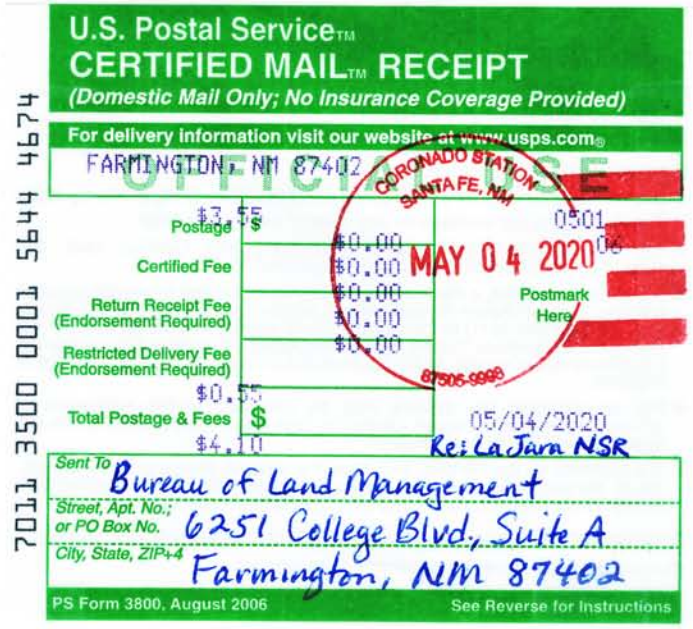

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Restricted Delivery Fee (Endorsement Required) $0.00
Total Postage & Fees $4.10
CORONADO STATION SANTA FE, NM 87505-9998
MAY 04 2020
0501 06
Postmark Here
05/04/2020
Re: La Jara NSR
Sent To Bureau of Land Management
Street, Apt. No.; or PO Box No. 6251 College Blvd., Suite A
City, State, ZIP+4 Farmington, NM 87402
PS Form 3800, August 2006 See Reverse for Instructions
7011 3500 0001 5644 4674

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Certified Fee $0.00
Return Receipt Fee (Endorsement Required) $0.00
Restricted Delivery Fee (Endorsement Required) $0.00
Total Postage & Fees $4.10
CORONADO STATION SANTA FE, NM 87505-9998
MAY 04 2020
0501 06
Postmark Here
05/04/2020
Sent To Gomez Family Property, LLC
Street, Apt. No.; or PO Box No. 432 Parkland Drive
City, State, ZIP+4 Aztec, NM 87410
PS Form 3800, August 2006 See Reverse for Instructions
7011 3500 0001 5644 4704

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Certified Fee $0.00
Return Receipt Fee (Endorsement Required) $0.00
Restricted Delivery Fee (Endorsement Required) $0.00
Total Postage & Fees $4.10
CORONADO STATION SANTA FE, NM 87505-9998
MAY 04 2020
0501 06
Postmark Here
05/04/2020
Re: La Jara NSR
Sent To County Clerk, Rio Arriba County
Street, Apt. No.; or PO Box No. P.O. Box 158
City, State, ZIP+4 Tierra Amarilla, NM 87575
PS Form 3800, August 2006 See Reverse for Instructions
7011 3500 0001 5644 4681

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Certified Fee $0.00
Return Receipt Fee (Endorsement Required) $0.00
Restricted Delivery Fee (Endorsement Required) $0.00
Total Postage & Fees $4.10
CORONADO STATION SANTA FE, NM 87505-9998
MAY 04 2020
0501 06
Postmark Here
05/04/2020
Re: La Jara NSR
Sent To County Clerk, San Juan County
Street, Apt. No.; or PO Box No. 100 S. Oliver Drive
City, State, ZIP+4 Aztec, NM 87410
PS Form 3800, August 2006 See Reverse for Instructions
7011 3500 0001 5644 4698

NOTICE OF AIR QUALITY PERMIT APPLICATION

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The following permit modifications are proposed:

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Nitrogen Oxides (NOX)	74.2	273
Carbon Monoxide (CO)	50.9	187
Volatile Organic Compounds (VOC) *	89.6	169
Sulfur Dioxide (SO2)	0.61	2.7
Particulate Matter (PM)	1.3	5.2
Particulate Matter less than 10 um diameter (PM10)	1.3	5.2
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Total sum of all Hazardous Air Pollutants (HAPs)	16.8	15.6
Green House Gas Emissions as Total CO2e	n/a	125,723

* The current facility-wide permitted VOC emissions are 310.4 tpy. The emission rates shown above reflect the worst-case updated PTE calculation.

The standard and maximum operating schedules of the facility will be from midnight to midnight, 7 days a week, 52 weeks per year

The owner and/or operator of the Facility is:

Harvest Four Corners, LLC, 1755 Arroyo Drive, Bloomfield, NM 87413

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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TX-GCI0413108-01

Local News

County sees 25 new cases of coronavirus

Hannah Grover
Farmington Daily Times
USA TODAY NETWORK – NEW MEXICO

AZTEC — Gov. Michelle Lujan Grisham said there are now 4,138 DOVID-19 cases in New Mexico.

During a Facebook live video press conference, Lujan Grisham announced 107 new cases. There are 178 people hospitalized who have tested positive for COVID-19, and 48 of those patients are on ventilators. She also announced six new coronavirus-related deaths, raising the total to 162.

Half of the six coronavirus-related fatalities announced Tuesday were San Juan County residents. Two of them were Cedar Ridge Inn residents, and another was a woman in her 80s who was hospitalized and had underlying medical conditions.

San Juan County had 25 new cases of coronavirus on Tuesday and McKinley County had 43 new cases.

Total cases by county include:

- Bernalillo County: 963
- Catron County: 1
- Chaves County: 25
- Cibola County: 74
- Colfax County: 5
- Curry County: 20
- De Baca County: 1
- Doña Ana County: 173
- Eddy County: 13
- Grant County: 15
- Guadalupe County: 15
- Harding County: 1
- Lea County: 12
- Lincoln County: 2
- Los Alamos County: 6
- Luna County: 7
- McKinley County: 1,274
- Otero County: 8
- Quay County: 4
- Rio Arriba County: 24
- Roosevelt County: 10
- Sandoval County: 426
- San Juan County: 806
- San Miguel County: 3
- Santa Fe County: 108
- Sierra County: 1
- Socorro County: 48
- Taos County: 20
- Torrance County: 17
- Union County: 3
- Valencia County: 53

Detectives arrest second man in Sasha Krause case

Hannah Grover Farmington Daily Times
USA TODAY NETWORK – NEW MEXICO

AZTEC — A second man has been arrested in connection with the murder of a woman who was living in the Mennonite community near Farmington, according to a post on the Coconino County (Arizona) Sheriff's Office Facebook page.

The Coconino County Sheriff's Office, in conjunction with agents from the Air Force Office of Special Investigation and with the assistance of the Bureau of Alcohol, Tobacco and Firearms, arrested Samuel David Gooch on May 3 in Surprise, Arizona.

The Associated Press identified Samuel Gooch as the brother of Mark Gooch, who is charged with kidnapping and murdering Sasha Krause.

Krause disappeared in January from the area of Lamp & Light Publishers in Crouch Mesa.

Her body was found Feb. 21 in Coconino County, Arizona, north of Flagstaff.

Samuel Gooch allegedly made arrangements via a telephone call to take possession of a firearm that his brother had given to a third party. Samuel Gooch flew from Wisconsin to Phoenix, accompanied by another family member, for the meeting.


Gooch

After Mark Gooch was arrested, detectives collected the firearm that was being stored at an unrelated residence in the Phoenix area.

According to the Facebook post, detectives facilitated Samuel Gooch's meeting, and Samuel Gooch took possession of the firearm that he believed had belonged to his brother.

Samuel Gooch has been charged with hindering prosecution in the first degree as well as attempting to tamper with physical evidence in the investigation into Krause's murder.

The family member who traveled with Samuel Gooch has been released without charges.

Water slide testing is scheduled for Saturday

Hannah Grover
Farmington Daily Times
USA TODAY NETWORK – NEW MEXICO

AZTEC — Visitors to Brookside Park on May 8 might see people using the water slides at Bisti Bay, but that does not mean the water park is open.

The Farmington Parks, Recreation and Cultural Affairs department will be testing the new water slides to ensure they are safe.

A subcontractor selected and supplied five people with different body masses to go down the slides, according to a press release from the PRCA. That will allow the PRCA to monitor the speeds at which different people descend and to determine the ideal water flow needed to operate the water slides. This water flow will then be set by locking the valves.

The slide manufacturer will perform that task.

The testing will allow the slides to be certified, and visitors will be allowed to use them once Bisti Bay at Brookside Park opens.

A date for opening the water park has not yet been determined and will depend on state guidelines to prevent the spread of coronavirus.

Hannah Grover covers government for The Daily Times. She can be reached at 505-564-4652 or via email at hgrover@daily-times.com.

Legal Notices | Legal Notices | Legal Notices

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#4172006 The Daily Times May 6, 2020

Legal Notices

there is a conflict between the legal description and the street address, the legal description shall control.

The foregoing sale will be made to satisfy a foreclosure judgment rendered by this Court in the above-entitled and numbered cause on March 30, 2020, being an action to foreclose a mortgage on the Property. Plaintiff's judgment is in the amount of $279,462.33, and the same bears interest at the rate of 3.6250% per annum, accruing at the rate of $27.75 per diem. The Court reserves entry of final judgment against Defendant, Thomas P. Ballew, for the amount due after foreclosure sale, including interest, costs, and fees as may be assessed by the Court. Plaintiff has the right to bid at the foregoing sale in an amount equal to its judgment, and to submit its bid either verbally or in writing. Plaintiff may apply all or any part of its judgment to the purchase price in lieu of cash.

In accordance with the Court's decree, the proceeds of sale are to be applied first to the costs of sale, including the Special Master's fees, and then to satisfy the above-described judgment, including interest, with any remaining balance to be paid unto the registry of the Court in order to satisfy any future adjudication of priority lienholders.

NOTICE IS FURTHER GIVEN that in the event that the Property is not sooner redeemed, the undersigned Special Master will, as set forth above, offer for sale and sell the Property to the highest bidder for cash or equivalent, for the purpose of satisfying, in the adjudged order of priorities, the judgment and decree of foreclosure described herein, together with any additional costs and attorney's fees, including the costs of advertisement and publication for the foregoing sale, and, reasonable receiver and Special Master's fees in an amount to be fixed by the Court. The amount of the judgment due is $279,462.33, plus interest to and including date of sale in the amount of $2,275.50, for a total judgment of $281,737.83.

The foregoing sale may be postponed and rescheduled at the discretion of the Special Master, and is subject to all taxes, utility liens and other restrictions and easements of record, and subject to a one (1) month right of redemption held by the Defendants upon entry of an order approving sale, **and** subject to the entry of an order of the Court approving the terms and conditions of sale.

Witness my hand this 23rd day of April, 2020.

/s/ David Washburn
DAVID WASHBURN,
Special Master
8100 Wyoming Blvd NE
Suite M-4, Box 272
Albuquerque, NM 87113
Telephone: (505) 318-0300
E-mail: sales@nsi.legal
4167584 Daily Times
April 29, May 6. 3. 20, 2020

Public Notice

NOTICE OF DESTRUCTION OF RECORDS: To all Bloomfield School District students who exited from any Special Services program during the **2012-2013** school year.

The Special Services Office of the Bloomfield School District is informing you of its intent to destroy the confidential records that have been maintained for a period of Seven (7) years since the student has exited from special educational services from this district. *The destruction date will be Friday, June 5, 2020 at 2:00 p.m. Bloomfield Time.

The purpose of this destruction is to best protect the individual against improper and unauthorized disclosure of the confidential information contained within the file.

However, you should be aware that certain records may be needed by the student or the parent for social security benefits or other purposes. A permanent record of a child's name, address, phone number, his or her grades, attendance record, grade level completed and year completed is maintained without time limitation.

If you are the parent, or student who has reached the age of majority (18 years), and wish to review and receive these records, you must contact the Special Services Office, (505) 632-4334, and make an appointment to obtain these records no later than 3:00 P.M. Bloomfield Time, on May 21, 2020 Upon review, a copy of any information that is requested will be provided to the parent or student.

If an appointment is made we will hold this file for review for (10) ten days from the appointment date. Once the review is completed this file will be destroyed (not prior to June 4, 2020).

If an appointment is not kept, nor rescheduled, the file will be destroyed ten (10) days after the last scheduled appointment date.

If we do not receive a response from you to this notice by May 21,2020, it will be viewed as consent to allow the Special Services Office of the Bloomfield School District to destroy the entire confidential record specific to this student.
If you do not understand the contents of this notice, or are in need of an interpreter, please contact the Special Services Office, (505) 632-4334, with your concerns.

Federal law states that, "the public agency shall inform parents when personally identifiable information collected, maintained, or used under this part is no longer needed to provide educational services to the Child." (CFR 300.573)
4169403 published in the Daily Times on May 3, 6, 7, 2020

REQUEST FOR PROPOSALS
Historic Mural and Building Documentation
The Southern Ute Indian Tribe (SUIT) is seeking a qualified consultant to perform high-resolution photography to digitally capture and preserve culturally significant murals, develop options and costs for their physical preservation, and perform 3-dimensional laser mapping of the interior and exterior of historical buildings.
For inquiries and a copy of the detailed RFP, contact the SUIT Environmental Programs Division:
Attn: Alexandra Ratcliff, General Assistance Program Manager
PO Box 737 MS #84, Ignacio, CO 81137
aratcliff@southernute-nsn.gov
Proposals will be received through June 5, 2020.
The Southern Ute Indian Tribe Tribal Employment Rights Office (TERO) has established a preference for contracting and subcontracting to certified Indian owned businesses. For information on certification, contact TERO at 970-563-0117.
SUIT reserves the right to reject any and all bids and to accept the bid deemed, in the opinion of the Tribe, to be in the best interest of the SUIT.
Legal No. 4175339 published in the Daily Times on May 6, 9 & 10, 2020.

STATE OF NEW MEXICO
ELEVENTH JUDICIAL DISTRICT COURT
SAN JUAN COUNTY
IN THE MATTER OF THE COMBINED ESTATE OF MYRTLE LOUISE MOFFITT-WILSON, DECEASED AND HERMAN KARL WILSON, DECEASED.
NO. D-1116-PB-2019-00087
NOTICE TO CREDITORS
NOTICE IS HEREBY GIVEN that ELVAN SILAS has been appointed Personal Representative of the Estate of MYRTLE LOUISE MOFFITT-WILSON, deceased, and HERMAN KARL WILSON, deceased. All persons having claims against this estate are required to present their claims within two months after the date of the first publication of this Notice or the claims will be forever barred. Claims must be presented to the Personal Representative in care of his attorney DATHAN WEEMS, 108 Wellesley Dr. SE, Albuquerque, New Mexico 87106, or filed with the ELEVENTH JUDICIAL DISTRICT COURT Clerk, 851 Andrea Dr. Farmington, NM 87401.
/s/ Dathan Weems
DATHAN WEEMS
Attorney for Personal Representative
108 Wellesley Dr. SE
Albuquerque, NM 87106
(505) 247-4700
#4159486, Daily Times, Apr 22, 29; May 6, 2020

STATE OF NEW MEXICO
IN THE PROBATE COURT
SANDOVAL COUNTY
No. SCPB2020091
IN THE MATTER OF THE ESTATE OF EDWARD MARTIN BROWN, Deceased.
NOTICE TO CREDITORS
NOTICE IS HEREBY GIVEN that George T. Brown has been appointed Personal Representative of this estate. All persons having claims against this estate are required to present their claims within four (4) months after the date of the first publication of this Notice or the claims will be forever barred.
Claims must be presented either to the undersigned Personal Representative at the following address:
George T. Brown
P.O. Box 1842
Aztec, NM 87410
or filed with the Probate Court of Sandoval County, New Mexico, located at 1500 Idalia Road, Building D, P.O. Box 40, Bernalillo, NM 87004.
DATED this 20th day of April, 2020.
T. Ryan Lane, Attorney for the Estate of Edward Martin Brown, IV
103 S. Main Ave.
Aztec, New Mexico 87410
#4160446, Daily Times, Apr. 22, 29; May 6, 2020

LEGAL NOTICE
The 2019 Annual Consumer Confidence Report for the Upper La Plata Water Users Association is now available for viewing at https://lowervalleywater.com/lpccr2019.pdf, the La Plata Post Office, and the Upper La Plata Water Users Association Office located at 1438 NM 170, La Plata, NM.

The Source Water Assessment & Protection Report for the Upper La Plata Water Users Association is available for view at the Association's Office.
4179901, Daily Times, May 6, 7, 2020

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#4172006 The Daily Times May 6, 2020

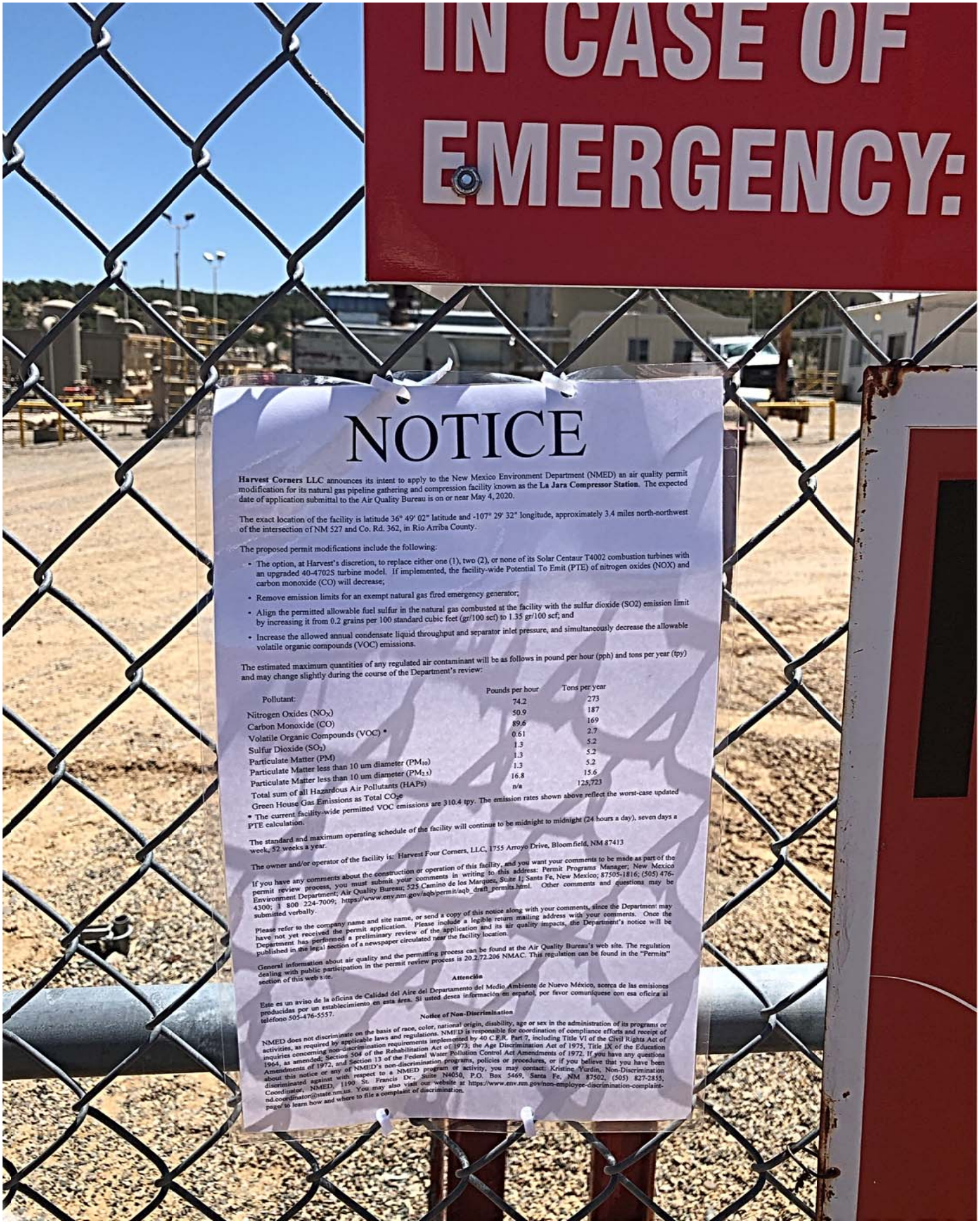
May 6 - Prime Time

1 Comcast Farmington 2 Shiprock 3 Charter Durango/Dolores 4 DISH 5 DirectTV

		1	2	3	4	5	6PM	6:30	7PM	7:30	8PM	8:30	9PM	9:30	10PM	10:30	11PM	11:30
CW KWGN	2	-	-	20	-	-	Bang	Bang	(:59) Channel 2 News at 7 (N)		Riverdale: Seventy-Six. (N)		Bulletproof: Episode 2.		Men	Men	News (N)	(:35) Family
CW KCNC	4	-	-	-	-	-	News (N)	News (N)	Survivor: The Penultimate. Final castaways. (N)				SEAL Team (N)		News (N)	(:35) Late Show (N)		Corden (N)
PBS KRMA	6	-	-	9	-	-	The PBS NewsHour (N)		Spy in the Wild: The North.		H2O: Molecule: Crisis.		Expedition: Mexico – Maya.		Day of Days: June 6, 1944		Amanpour and Company (N)	
NBC KUSA	9	-	-	15	-	-	9NWS6P-NX	ET Pitbull. (N)	Chicago Med		Chicago Fire A deadly fire.		Chicago P.D.: Familia.		News (N)	(:35) Tonight Show (N)		Late Night
NBC KOB	4	4	12	-	4	4	Eyewitness News 4 at 6	News 4 at 6:30 (N)	Chicago Med: An injured patient.		Chicago Fire: What Went Wrong.		Chicago P.D.: Carjacking attempt.		Eyewitness News 4 at 10	(:35) The Tonight Show Starring Jimmy Fallon (N)		Late Night Seth Meyers (N)
PBS KNME	5	5	5	-	5	5	The PBS NewsHour (N)		Spy in the Wild: A Nature Miniseries: The North. (N)		H2O: The Molecule That Made Us: Crisis. (N)		Expedition (N)	To Be Announced	Aging Matters - End of Life Medical advances.		Amanpour and Company (N)	
ABC KOAT	7	7	7	7	7	7	Action 7 News Live (N)	Entertainment Tonight (N)	The Goldbergs (N)	Single Parents (N)	American Housewife (N)	Single Parents (N)	Shark Tank (N)		News (N)	Jimmy Kimmel Live (N)	(:06) Nightline (N)	Jimmy Kimmel Live
CBS KRQE	13	13	-	13	13	13	Jeopardy!: Teachers. (N)	Wheel of Fortune	Survivor: The Penultimate. Seven final castaways make last attempt to earn the coveted $2 million prize. (N)				SEAL Team: No Choice. Leader's location. (N)		KRQE News 13 at 10 PM	Late Show with Stephen Colbert Robert De Niro. (N)		The Late Late Show (N)
FOX KRQE2	13.2	2	-	-	2	16	News (N)	News (N)	The Masked Singer: Quarterfinals. Jeff Dye. (N)		The Masked Singer: After the Mask: Quarterfinals. (N)		KRQE News 13 at 9 PM	News (N)	Jeopardy!	(:35) News (N)	(:05) DailyMailTV (N)	(:35) DailyMailTV (N)
CW KWBQ	19	12	-	-	19	19	Big Bang Theory	Big Bang Theory	Riverdale: Seventy-Six. A story of revenge. (N)		Bulletproof: Episode 2. Infamous criminal.		Mom: Jell-O Shots.	Mom: Fun Girl Stuff.	Two and a Half Men	Two and a Half Men	Seinfeld: Opposite.	Seinfeld: Stranded.
MNT KASY	50	6	-	-	50	50	Family Feud	Family Feud	Dateline: The Women & Dir.		Dateline: Emerald Coast.		News (N)	News (N)	Funny You	(:35) News (N)	Pawn Stars	Pawn Stars
A&E		52	-	30	118	265	Ghost Hunters Gold hunters.		Ghost Hunters: Haunted. (N)		Celebrity Ghost Stories (N)		Ghost Hunters High school.		Ghost Hunters Gold hunters.		Ghost Hunters: Haunted.	
AMC		37	-	47	131	254	Fury ★★★½ (2014, Action) Brad Pitt. Soldiers risk lives in enemy territory. 'R'						The Perfect Storm ★★½ (2000, Drama) George Clooney. Crew battles storm. 'PG-13'					
CNN		323	3	29	200	202	Anderson Cooper 360° (N)		Cuomo Prime Time (N)		CNN Tonight (N)		CNN Tonight (N)		Anderson Cooper 360°		Cuomo Prime Time	
COM		47	-	60	107	249	South Park	South Park	South Park	South Park	Daily	South Park	South Park	South Park	South Park	South Park	South Park	Yankers (N)
DISC		16	6	66	182	278	Expedition Unknown (N)		Expedition Unknown (N)		Expedition Unknown		Expedition Unknown		Expedition Unknown		Expedition Unknown	
DISN		31	18	38	173	291	(:05) Big City	Raven	Raven	Raven	(:05) BUNK'D	(:35) BUNK'D	Big City	(:50) BUNK'D	Raven	Raven	Unsittable	Coop & Cami
ESPN		30	10	27	140	206	(5:00) 2006 NBA Finals: Dallas vs Miami			2011 NBA Finals:	Finals, Game 2: Dallas Mavericks at Miami Heat				SportsCenter		SportsCenter	
FNC		18	-	49	205	360	Tucker Carlson Tonight (N)		Hannity (N)		The Ingraham Angle (N)		News @ Night (N)		Tucker Carlson Tonight		Hannity	
FREE		36	4	34	180	311	(4:30) Jumanji ★★★ (1995) 'PG'		Motherland: Fort Salem (N)		Motherland: Fort Salem		The 700 Club		Step Up 2: The Streets ★★½ (2008) Briana Evigan. 'PG-13'			
FSN		38	-	-	415	686	(4:00) MLB Baseball (Replay)		Football	Sunsday Classic:	1993 Gm 5 Sonics Suns.			Sunsday	The Outlet	Football	Fight Sports World Class	
FX		41	-	523	136	248	(5:30) Transformers: The Last Knight ★★ (2017, Action) Mark Wahlberg. State of war. 'PG-13'						Daddy's Home 2 ★★½ (2017, Comedy) Will Ferrell. 'PG-13'				Shadows (N)	Shadows
HALL		17	-	56	185	312	The Story of Us (2019, Romance) Maggie Lawson.				Golden	Golden	Golden	Golden	Golden	Golden	Frasier	Frasier
LIFE		23	-	32	108	252	Married at First Sight		(:03) Madea Goes to Jail (2009, Comedy) Tyler Perry. 'PG-13'				The Big Fat Wedding Walk		Married at First Sight		Madea Goes to Jail 'PG-13'	
NICK		34	8	35	170	299	Danger	SpongeBob	Friends	Friends	Friends	Friends	Friends	Friends	Friends	Friends	Friends	Friends
PARMT		22	17	43	241	241	Training Day ★★★½ (2001, Drama) Denzel Washington. 'R'				(:15) Man on Fire (2004, Drama) Denzel Washington. Former assassin protects child. 'R'						Training Day ★★★½ (2001) 'R'	
TBS		15	11	17	139	247	Bang	Bang	Bang	Bang	Bang	Frontal (N)	Conan (N)	Frontal	Seinfeld	Conan	2 Broke Girls	2 Broke Girls
TCM		501	-	62	132	256	The Dragon Painter 'NR'		Piccadilly ★★½ (1929, Drama) Gilda Gray. 'NR'				Daughter of Shanghai (1937) 'NR'			Phantom of Chinatown (1940) 'NR'		
TLC		20	-	25	183	280	My 600-lb Life: Dottie. Wife's challenge. (N)				My 600-lb Life: Jeanne's Story. A problematic home.				My 600-lb Life: Dottie. Wife's challenge.			
TNT		43	20	26	138	245	All Elite Wrestling: Dynamite Wrestlers compete.				Shaq Life	Shaq Life	Rush Hour ★★★ (1998, Action) Jackie Chan. 'PG-13'				Rush Hour 2 (2001) 'PG-13'	
UNI		26	-	5	41	41	Te doy la vida Hijo enfermo.		Amor eterno Amor a prueba.		Como tú no hay 2		Noticiero (N)	Noticiero (N)	Contacto deportivo		Destilando amor	
USA		40	22	45	105	242	WWE NXT Adam Cole vs. Velveteen Dream. (Live)				Law & Order: SVU		Law & Order: SVU		Law & Order: SVU: Payback.		Law & Order: SVU	
WGN-A		64	9	-	239	307	Married	Married	Married	Married	Married	Married	Married	Married	Married	Married	Married	Married
ENCORE		518	21	444	341	536	Napoleon ★★★	(:34) America's Sweethearts (2001) 'PG-13'			(500) Days of Summer (2009) Joseph Gordon-Levitt. 'PG-13'				9 to 5 (1980, Comedy) Jane Fonda. Trio gets revenge. 'PG'			
HBO		551	-	318	303	504	Mr. & Mrs. Smith ★★★ (2005, Action) Brad Pitt. 'PG-13'				Westworld: Passed Pawn.		Westworld: Crisis Theory.		(:20) Cowboys & Aliens (2011, Action) Daniel Craig. 'PG-13'			
MAX		561	-	349	311	516	(:55) Scoop (2006) Hugh Jackman. 'PG-13'			(:35) The Sitter (2011, Comedy) Jonah Hill. 'R'			Night School ★★½ (2018, Comedy) Kevin Hart. 'PG-13'				Shallow Hal (2001) 'PG-13'	
SHO		576	2	378	319	546	(:15) Penny Dreadful		Second Act (2018, Comedy) Jennifer Lopez. New job. 'PG-13'				The Affair Tour of Montauk.		Couples	Work in Progress	Hustlers ★★★ (2019) 'R'	
STARZ		534	-	421	351	526	(:16) I Think We're Alone Now (2018) Last human.				(:57) The Equalizer 2 (2018, Action) Denzel Washington. 'R'				All About Steve ★★ (2009) 'PG-13'			Gigolo ★★ 'R'


HARVEST MIDSTREAM
LA JARA COMPRESSOR STATION
IN CASE OF EMERGENCY: 1-713-289-2921
NO SMOKING, MATCHES OR OPEN FLAMES WITHIN THIS FACILITY
NO TRESPASSING
NOTICE
LONG SLEEVE SHIRTS
HARD HATS
SAFETY GLASSES & HEARING PROTECTION
REQUIRED AT THIS LOCATION
NO SMOKING
HARD HATS REQUIRED
SAFETY FIRST
CAUTION
REQUIRED HEARING PROTECTION
CAUTION
REQUIRED EYE PROTECTION


HARVEST
MIDSTREAM
LA JARA COMPRESSOR STATION
IN CASE OF
EMERGENCY:
1-713-289-2921
NOTICE
NOTICE
LONG SLEEVE
SHIRTS
HARD HATS
NO
SMOKING
SAFETY



NOTICE

Harvest Corners LLC announces its intent to apply to the New Mexico Environment Department (NMED) an air quality permit modification for its natural gas pipeline gathering and compression facility known as the **La Jara Compressor Station**. The expected date of application submittal to the Air Quality Bureau is on or near May 4, 2020.

The exact location of the facility is latitude 36° 49' 02" latitude and -107° 29' 32" longitude, approximately 3.4 miles north-northwest of the intersection of NM 527 and Co. Rd. 362, in Rio Arriba County.

The proposed permit modifications include the following:

- The option, at Harvest's discretion, to replace either one (1), two (2), or none of its Solar Centaur T4002 combustion turbines with an upgraded 40-4702S turbine model. If implemented, the facility-wide Potential To Emit (PTE) of nitrogen oxides (NOX) and carbon monoxide (CO) will decrease;
- Remove emission limits for an exempt natural gas fired emergency generator;
- Align the permitted allowable fuel sulfur in the natural gas combusted at the facility with the sulfur dioxide (SO2) emission limit by increasing it from 0.2 grains per 100 standard cubic feet (gr/100 scf) to 1.35 gr/100 scf; and
- Increase the allowed annual condensate liquid throughput and separator inlet pressure, and simultaneously decrease the allowable volatile organic compounds (VOC) emissions.

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

Pollutant:	Pounds per hour	Tons per year
Nitrogen Oxides (NO_X)	74.2	273
Carbon Monoxide (CO)	50.9	187
Volatile Organic Compounds (VOC) *	89.6	169
Sulfur Dioxide (SO_2)	0.61	2.7
Particulate Matter (PM)	1.3	5.2
Particulate Matter less than 10 um diameter (PM_{10})	1.3	5.2
Particulate Matter less than 10 um diameter ($PM_{2.5}$)	1.3	5.2
Total sum of all Hazardous Air Pollutants (HAPs)	16.8	15.6
Green House Gas Emissions as Total CO_2e	n/a	125,723

* The current facility-wide permitted VOC emissions are 310.4 tpy. The emission rates shown above reflect the worst-case updated PTE calculation.

The standard and maximum operating schedule of the facility will continue to be midnight to midnight (24 hours a day), seven days a week, 52 weeks a year.

The owner and/or operator of the facility is: Harvest Four Corners, LLC, 1755 Arroyo Drive, Bloomfield, NM 87413

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.

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

General information about air quality and the permitting process can be found at the Air Quality Bureau's web site. The regulation dealing with public participation in the permit review process is 20.2.72.206 NMAC. This regulation can be found in the "Permits" section of this web site.

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.

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General Posting of Notices – Certification

I, Kijun Hong, the undersigned, certify that on **May 4, 2020,** I posted a true and correct copy of the attached Public Notice in the following publicly accessible and conspicuous places in **Rio Arriba and San Juan Counties**, State of New Mexico on the following dates:

1. La Jara Facility Entrance 05/04/2020
2. Blanco Post Office, Blanco NM 87412 05/04/2020
3. Bloomfield Post Office, Bloomfield NM 87413 05/04/2020
4. Navajo Dam Post Office, Navajo Dam NM 87419 05/04/2020

Signed this 4th day of May, 2020.

Signature

5/4/2020
Date

Kijun Hong
Printed Name

Environmental Specialist –Harvest Four Corners. LLC
Title

Cirrus Consulting, LLC

Santa Fe, NM
Voice Line: (505) 466-1790 * Fax Line (call voice line first): (505) 466-4599
lkillion@cirrusllc.com

To: **KKFG-104.5 FM** **Fax:** **(505) 325-6797**
KOOL 104.5 Phone: (505) 325-1716
Bloomfield, NM

From: Lisa Killion
Date: May 6, 2020

Subject: **REQUEST FOR PSA**

Dear Madam or Sir,

Harvest Four Corners, LLC is submitting an air quality permit application to the NM Air Quality Bureau to modify their permit for the natural gas pipeline compressor station known as the La Jara Compressor Station, located in Rio Arriba County, NM.

New Mexico Environment Department Air Quality Bureau regulations requires that a public notice of the proposed project must be "submitted as a public service announcement to at least one radio or television station that serves the municipality or county in which the source is or is proposed to be located." Therefore, I am submitting for your consideration a draft PSA on page 2 of this fax.

Thank you for considering this request.

PUBLIC SERVICE ANNOUNCEMENT

Harvest Four Corners, LLC, located at 1755 Arroyo Drive in Bloomfield, New Mexico (87413), announces its intent to apply to the New Mexico Environment Department for a modification to its air quality permit for the **La Jara Compressor Station,** a natural gas pipeline compressor facility, located at latitude 36° 49' 02" and longitude -107° 29' 32" in Rio Arriba County, about 3.4 miles north-northwest of the junction of NM Highway 527 and County Road 362.

Harvest proposes the following permit modifications:

- The discretion to replace either one, two, or none of its Solar Centaur T4002 combustion turbines with an upgraded turbine model 40-4702S. If replacements are implemented, the facility-wide Potential To Emit of nitrogen oxides and carbon monoxide will decrease;
- Remove the permitted emission limits for an exempt natural gas fired emergency generator;
- Align the allowed fuel sulfur in the natural gas with that used in the sulfur dioxide emission limits by increasing it from 0.2 to 1.35 grains of sulfur per 100 standard cubic feet of fuel natural gas; and
- An increase in the allowed condensate liquid annual throughput and the separator inlet pressure, and a simultaneous decrease the allowed emissions of volatile organic compounds.

Public notices have been posted at the following locations:

Posting Location	Date of Posting
La Jara Compressor Station Entrance	05/04/2020
Blanco Post Office, Blanco, NM 87412	05/04/2020
Bloomfield Post Office, Bloomfield, NM 87513	05/04/2020
Navajo Dam Post Office, Navajo Dam, NM 87419	05/04/2020

Questions and comments regarding this notice may be directed to:

Program Manager, New Source Review
New Mexico Environment Department
Air Quality Bureau
525 Camino de los Marquez, Suite 1
Santa Fe, New Mexico, 87505-1816
Phone: (505) 476-4300 / Fax: (505) 476-4375

TRANSACTION REPORT

MAY-06-2020 08:44 AM

FOR: 505 466 4599

SEND

DATE	START	RECEIVER	PAGES	TIME	NOTE
MAY-06	08:43 AM	15053256797	2	1'32"	OK

Submittal of Public Service Announcement – Certification

I, Lisa Killion, the undersigned, certify that on **May 6, 2020,** I submitted a public service announcement to **KKFG FM (KOOL 104.5)** that serves **San Juan and Rio Arriba Counties** in the State of New Mexico, in which the source is or is proposed to be located; and that **KKFG FM 104.5 DID NOT RESPOND.**

.

Signed this 6th day of May , 2020 .

Lisa Killion
Signature

5/6/2020
Date

Lisa Killion
Printed Name

Cirrus Consulting, LLC (Consultant)
Title {APPLICANT OR RELATIONSHIP TO APPLICANT}

Section 10

Written Description of the Routine Operations of the Facility

---

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

The La Jara Compressor Station compresses natural gas for pipeline transmission.

Natural gas is received from independent producers and metered at the facility. Entrained condensate and produced water in the gas pipeline is separated from the stream via an inlet separator. The gas is compressed for pipeline transmission using compressors driven by natural gas-fired turbines.

The facility is permitted for the operation of five turbines. Other emission sources at the facility include startups, shutdowns and routine maintenance (SSM) from the compressors and piping (including a pig launcher and receiver), an emergency generator, a fuel gas heater, fugitive emissions from process piping (valves, flanges, seals, etc.), storage tanks, and truck loading of liquids.

The facility is authorized to operate continuously, 24 hours per day, seven days per week, 52 weeks per year, 8,760 hours per year.

Section 11
Source Determination

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

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

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

A. Identify the emission sources evaluated in this section (list and describe)**:**

La Jara Compressor Station

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

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

☒ **Yes** ☐ **No**

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

☒ **Yes** ☐ **No**

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

☒ **Yes** ☐ **No**

C. Make a determination:

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

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

Section 12

Section 12.A
PSD Applicability Determination for All Sources

(Submitting under 20.2.72, 20.2.74 NMAC)

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

A. This facility is:

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

B. **This facility is not one of the listed 20.2.74.501 Table I – PSD Source Categories. The "project" emissions** for this modification are **not significant as they are below the significant emission rates in Table 2 of 20.2.74.502 NMAC. The "project" emissions listed below result only from changes described in this permit application, and do not result from any other permit revisions or modifications, past or future, to this facility. The proposed project does not result in "de-bottlenecking", or other associated emissions resulting in higher emissions. The project emissions (before netting) for this project are as follows [see Table 2 in 20.2.74.502 NMAC for a complete list of significance levels]:**

a. **NOx: 0 TPY**
b. **CO: 0 TPY**
c. **VOC: -141.8 TPY**
d. **SOx: 0.1 TPY**
e. **PM: 0.1 TPY**
f. **PM10: 0.1 TPY**
g. **PM2.5: 0.1 TPY**
h. **Fluorides: 0 TPY**
i. **Lead: 0 TPY**
j. **Sulfur compounds (listed in Table 2): 0 TPY**
k. **GHG: 2,126 TPY**

Note: The per-pollutant emission changes above reflect the difference between the current facility-wide emissions reflected in the permit and the highest PTE resulting from the implementation or non-implementation of the proposed turbine replacements.

C. **Netting is not required (project is not significant).**

D. **BACT** is **not required for this modification, as this application is a minor modification.**

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

No permit modifications have occurred during the contemporaneous period that should be combined with this project to be considered as permitting action.

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/

Federal Regulations

Federal standards and requirements are embodied in Title 40 (Protection of the Environment), Subchapter C (Air Programs) of the CFR, Parts 50 through 99. The applicability of those parts of the CFR that are consistent with the limited list of standards and requirements defined as applicable requirements are identified in the following pages.

FEDERAL REGULATIONS APPLICABILITY CHECKLIST

FEDERAL REGU-LATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
40 CFR 50	**National Ambient Air Quality Standards (NAAQS)**	Yes	Facility	The requirement to comply with the National Ambient Air Quality Standards applies to all sources operating within the State of New Mexico, including the station.
40 CFR 51	**Requirements for Preparation, Adoption, and Submittal of Implementation Plans**	No		The responsibility to prepare, adopt and submit for EPA approval Implementation Plans applies to local and state/tribal governmental agencies. The facility is not a local, state or tribal governmental agency and therefore, the regulation does not apply.
40 CFR 52	**Approval and Promulgation of Implementation Plans**	No		40 CFR 52.21, *Prevention of Significant Deterioration of Air Quality* is not applicable to the facility, as it is a Prevention of Significant Deterioration (PSD) minor source. The remainder of the subpart is also not applicable as it addresses approval of local, state and/or tribal agency Implementation Plans for administering the Prevention of Deterioration (PSD) program.
NSPS 40 CFR 60, Subpart A	**General Provisions**	Yes	Turbines 3, 6 and 7; Turbines 8 & 9 Potentially applicable to new centrifugal compressors, pneumatic controllers, and the collection of fugitive emissions components	Applies if any other NSPS subpart applies. . NSPS subpart GG is applicable to combustion turbine units 3, 6, and 7. NSPS subpart KKKK is applicable to the replacement combustion turbine units 8 and 9, if and when they are installed. NSPS subpart OOOOa is not currently applicable to the equipment currently onsite, but is potentially applicable to new affected sources if they are installed. The applicability of the subpart will be evaluated for any new compressors, pneumatic controllers, and the collection of fugitive emissions components installed at the facility at a future time.
NSPS 40 CFR60, Subpart Da	Performance Standards for **Electric Utility Steam Generating Units**	No		The subpart applies to each electric utility steam generating unit that is capable of combusting more than 73 megawatts (MW) (250 million British thermal units per hour (MMBtu/hr)) heat input of fossil fuel (either alone or in combination with any other fuel); and that commences construction, modification, or reconstruction after September 18, 1978. The compressor station is not an affected facility as defined under the regulation; therefore, the subpart does not apply.

FEDERAL REGU-LATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
NSPS 40 CFR 60, Subpart Db	Standards of Performance for **Industrial-Commercial-Institutional Steam Generating Units**	No		The subpart applies to each steam generating unit that commences construction, modification, or reconstruction after June 19, 1984, and that has a heat input capacity from fuels combusted in the steam generating unit of greater than 29 MW (100 million Btu/hour). The compressor station is not an affected facility as defined in the regulation; therefore, the subpart does not apply.
NSPS 40 CFR 60, Subpart Dc	Standards of Performance for **Small Industrial-Commercial-Institutional Steam Generating Units**	No		The subpart applies to each steam generating unit that commences construction, modification, or reconstruction after June 9, 1989, and that has a maximum design heat input capacity of 29 megawatts (MW) (100 million British thermal units per hour (MMBtu/hr)) or less, but greater than or equal to 2.9 MW (10 MMBtu/hr). The facility does not have any affected sources under the regulation; therefore, the subpart does not apply.
NSPS 40 CFR 60, Subpart Ka	Standards of Performance for **Storage Vessels for Petroleum Liquids for which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984**	No		The affected facility to which this subpart applies are storage tanks with capacity greater than 151,416 liters (40,000 gallons) that are used to store petroleum liquids for which construction is commenced after May 18, 1978. The facility does not have equipment defined as an affected facility as defined in the regulation; therefore, the subpart does not apply.
NSPS 40 CFR 60, Subpart Kb	Standards of Performance for **Volatile Organic Liquid Storage Vessels** (Including **Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984**	No		The affected facility to which this subpart applies is any storage vessel with a capacity greater than or equal to 75 cubic meters (m^3) used to store volatile organic liquids (VOL) for which construction, reconstruction, or modification is commenced after July 23, 1984. Except for the unit T-40 produced water storage tank, all of the storage tanks at the facility are below 75 m^3 capacity. Therefore, the regulation does not apply to these tanks. The unit T-40 produced water storage tank is a 500-barrel (21,000 gallon /79.5 m^3) tank constructed in 2015. The produced water contains trace amounts of condensate. The tank stores produced water at the facility prior to custody transfer. Therefore, under § 60.110b(b) the subpart does not apply.
NSPS 40 CFR 60 Subpart GG	Standards of Performance for **Stationary Gas Turbines**	Yes	Turbine units 3, 6, & 7	Affected facilities under the subpart are stationary gas turbines with a heat input at peak load equal to or greater than 10.7 gigajoules (10 MMBtu) per hour and for which construction commenced after October 3, 1977 Turbine units 3, 6 & 7 at the facility were each constructed after the applicability date of October 3, 1977, and have a peak input load greater than the applicability threshold of 10.15 MMBtu/hr. The units must comply with the NO_X emission limitation of 150 ppmv at 15% O_2 on a dry basis; and with the SO_2 emissions limitation of 0.015% by volume at 15% O_2 on a dry basis or use a fuel that does not contain sulfur in excess of 0.8 percent by weight (8,000 ppmw). Turbine units 1 and 2 were each constructed in 1972, prior to the regulatory applicability date. Therefore, the regulation does not apply to turbine units 1 and 2.

FEDERAL REGU-LATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
NSPS 40 CFR 60, Subpart KKK	Standards of Performance for **Leaks of VOC from Onshore Gas Plants**	No		An affected facility under the subpart is an onshore gas plant that commences construction, reconstruction, or modification after January 20, 1984, and includes the group of all equipment (each pump, pressure relief device, open-ended valve or line, valve, compressor, and flange or other connector that is in VOC service or in wet gas service, and any device or system required by this subpart) except compressors (defined in § 60.631) within a process unit. A compressor station, dehydration unit, sweetening unit, underground storage tank, field gas gathering system, or liquefied natural gas unit is covered by this subpart if it is located at an onshore natural gas processing plant. If the unit is not located at the plant site, then it is exempt from the provisions of the subpart. The facility is not an onshore gas plant and the subpart does not apply.
NSPS 40 CFR 60, Subpart LLL	Standards of Performance for **Onshore Natural Gas Processing: SO_2 Emissions**	No		An affected facility is each sweetening unit, and each sweetening unit followed by a sulfur recovery unit, for which construction or modification commenced after January 20, 1984 at a natural gas processing plant. The facility is not a natural gas processing plant and does not include any affected units as defined by the subpart; therefore the subpart does not apply.
NSPS 40 CFR 60, Subpart JJJJ	Standards of Performance for **Stationary Spark Ignition Internal Combustion Engines**	No		Under § 60.4230, the requirements of the subpart apply to spark-ignition (SI), reciprocating internal combustion engines (RICE) constructed, modified or reconstructed after June 12, 2006. The unit 4 backup emergency generator engine was constructed in 1981, prior to the regulatory applicability date. Therefore, the regulation is not applicable to the unit 4 generator RICE. The engine has not undergone either "modification" or "reconstruction" under NSPS.
NSPS 40 CFR 60, Subpart KKKK	Standards of Performance for **Stationary Combustion Turbines**	Yes	Turbine units 8 & 9	This subpart establishes emission standards and compliance schedules for the control of emissions of NO_X and SO_2 emissions from stationary combustion turbines of 10 MMBtu/hr (hhv) or greater that commence construction, modification or reconstruction after February 18, 2005. The proposed stationary gas turbine replacement units 8 and 9, if and when installed, will be constructed, modified or reconstructed after the regulatory applicability date. Therefore, the subpart applies to the units. Under §60.4320 the turbine(s) must meet the applicable NO_X emission limit in Table 1. The proposed units 8 and 9 turbines, if installed, will be each be a modified or reconstructed turbine ≤ 50 MMBtu/hr. Therefore, each must meet a NO_X emission limit of 150 ppm at 15 percent O_2 or 1,100 ng/J of useful output (8.7 lb/MWh). The natural gas fired combustion turbines 8 and /or 9 must each meet either a 0.90 pounds SO_2 per megawatt-hour (lb/MWh) gross output or a 0.060 lb SO_2/MMBtu heat input emission standard per §60.4330(a)(1) or (a)(2), respectively. §60.4333 requires the turbines must be operated in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction. Performance monitoring requirements for turbines that do not use water or steam injection are specified under §60.4340. The combustion turbine units 8 and 9 have not been installed. If and when the turbine(s) are installed, Harvest will comply with all applicable requirements as they apply to the unit 8 and/or 9 combustion turbines.

FEDERAL REGU-LATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
NSPS 40 CFR 60, Subpart OOOO	Standards of Performance for **Crude Oil and Natural Gas Production, Transmission and Distribution for which Construction, Modification or Reconstruction Commenced After August 23, 2011, and on or before September 18, 2015**	No		Subpart OOOO establishes natural gas production, processing, transmission and distribution emission and equipment standards, including well completions; single continuous bleed, natural gas driven pneumatic controllers operating at bleed rates greater than 6 scfh and located between a wellhead and point of custody transfer; equipment leaks and sweetening units at natural gas processing plants; reciprocating compressors; centrifugal compressors; and storage vessels at well sites. The regulation includes provisions for initial and continuous compliance demonstrations, and recordkeeping and reporting requirements. As it applies to the natural gas production segment, "affected sources" include the following sources constructed, modified or reconstructed after August 23, 2011: - Each affected single natural gas well, as described in the regulation; - Each centrifugal compressor, unless it is located at a well site or adjacent well site; - Each reciprocating compressor, unless it is located at a well site or adjacent well site; - Each single continuous bleed, natural gas driven pneumatic controller operating at a bleed rate of greater than 6 scfh and located between a wellhead and point of custody transfer; - Each single storage vessel affected facility with VOC emissions of six (6) tpy or greater. The equipment at the facility were constructed prior to the applicability date; therefore, the regulation is not applicable to the existing equipment. Should a new affected source under the regulation be installed at the facility at a future time, the applicability of the subpart to that source shall be evaluated. As applicable, Harvest will comply with the requirements of the regulation.
NSPS 40 CFR 60, Subpart OOOOa	Standards of Performance for **Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced After September 18, 2015**	Potentially applicable	New centrifugal compressors, pneumatic controllers, and the collection of fugitive emissions components	Subpart OOOOa establishes emission standards and compliance schedules for the control of GHG methane emission limits as well as emission standards and compliance schedules for the control of VOC and SO2 emissions from crude oil and natural gas facilities that commence construction, modification, or reconstruction after September 18, 2015. As it applies to equipment at a compressor station in the natural gas production segment, "affected sources" include the following emission sources constructed, modified or reconstructed after September 18, 2015 (§60.5365a): - Each single centrifugal compressor using wet seals, unless it is located at a well site or adjacent well site servicing more than one well site (§60.5365a(b)); - Each single reciprocating compressor, unless it is located at a well site or adjacent well site servicing more than one well site (§60.5365a(c)); - Each pneumatic controller that is a single continuous bleed natural gas-driven pneumatic controller operating at a natural gas bleed rate greater than 6 scfh (§60.5365a(d)(1)); - Each single storage vessel with the potential for VOC emissions equal to or greater than 6 tpy (§60.5365a(e)); and - The collection of fugitive emissions components at a compressor station, as defined in §60.5430a (§60.5365a(j)). The potential affected source equipment including the centrifugal compressors, pneumatic controllers, storage tanks and the collection of fugitive emissions components equipment at the facility, were each constructed prior to the applicability date or do not otherwise trigger the applicability of the regulation.

FEDERAL REGU-LATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
				Should a new affected source be installed at the facility, the applicability of the subpart to that source shall be evaluated upon installation. As applicable, Harvest will comply with the applicable requirements in the subpart for any future devices installed.
NESHAP 40 CFR 61, Subpart A	**General Provisions**	No		40 CFR 61National Emission Standards for Hazardous Air Pollutants (NESHAP) provides standards for equipment that emits hazardous air pollutants by specific source types. Subpart A, General Provisions, applies if any other 40 CFR 61 NESHAP subpart applies. Subpart A is not applicable because there are no stationary sources at this facility for which a standard is prescribed under this part.
NESHAP 40 CFR 61, Subpart V	National Emission Standard for **Equipment Leaks (Fugitive Emission Sources)**	No		40 CFR 61, subpart V provides equipment standards, and monitoring, recordkeeping and reporting standards for specified equipment in VHAP service, including fugitive emissions from pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, surge control vessels, bottoms receivers, and required control devices or systems. Subpart V is not applicable because none of the potentially affected sources are in VHAP service.
MACT 40 CFR 63, Subpart A	**General Provisions**	Yes	Emergency generator RICE unit 4	Applies if any other 40 CFR 63 (NESHAP/MACT) subpart applies. 40 CFR 63 (NESHAP/MACT) subpart ZZZZ applies to the unit 4 emergency generator RICE.
MACT 40 CFR 63, Subpart M	National Emission Standard for **Asbestos**	No		The subpart includes standards for minimizing asbestos emissions from several operations, including demolition and renovation activities. No existing or planned operation or activity at this facility triggers the applicability of this requirement. Therefore, the regulation does not apply.
MACT 40 CFR 63, Subpart HH	National Emission Standards for Hazardous Air Pollutants From **Oil and Natural Gas Production Facilities**	No		Under § 63.760, the subpart applies to owners and operators of affected sources located at oil and natural gas production facilities, including facilities that are major and area sources of hazardous air pollutants (HAP). Under the definitions provided in §63.761, the facility is a natural gas production field facility. As such, the definition of "major source" in §63.762 provides that only HAP emissions from glycol dehydration units and storage vessels are aggregated for a major source determination. The aggregated HAP emissions from the storage vessels are below the major HAP source threshold for a single HAP; therefore, the facility is an **area** source of HAP under subpart HH. (There are no glycol dehydration units at the facility.) Under §63.760(b)(2) "affected source" at an area source of HAP includes each TEG dehydrator unit. As there are no TEG dehydrator units at the facility, the regulation is not applicable.
MACT 40 CFR 63 Subpart HHH	National Emission Standards for Hazardous Air Pollutants From **Natural Gas Transmission and Storage Facilities**	No		Under §63.1270, applies to owners and operators of natural gas transmission and storage facilities that transport or store natural gas prior to entering the pipeline to a local distribution company or to a final end user (if there is no local distribution company), and that are major sources of hazardous air pollutants (HAP) emissions as defined in §63.1271. A production segment natural gas compressor station is not in the natural gas transmission and storage source category covered by the subpart. Therefore, the regulation does not apply.

FEDERAL REGU-LATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
MACT 40 CFR 63 Subpart YYYY	National Emission Standards for Hazardous Air Pollutants From **Stationary Combustion Turbines**	No		Under § 63.6080, subpart YYYY establishes emission and operating limitations for stationary combustion turbines located at a major source of HAP emissions. Under § 63.6175, "*Major source,* as used in this subpart, has the same meaning as in §63.2, except that . . . (3) For production field facilities, only HAP emissions from glycol dehydration units, storage vessel with the potential for flash emissions, combustion turbines and reciprocating internal combustion engines shall be aggregated for a major source determination . . . " The facility is an **area** source of HAP. Therefore, the subpart does not apply.
MACT 40 CFR 63, Subpart ZZZZ	National Emission Standards for Hazardous Air Pollutants for **Stationary Reciprocating Internal Combustion Engines**	Yes	Emergency generator RICE unit 4	40 CFR 63, Subpart ZZZZ establishes national emission limitations and operating limitations for hazardous air pollutants (HAP) emitted from existing, new, modified and reconstructed stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP. The regulation contains provisions for initial and continuous compliance demonstration. As defined at §63.6585(c), the station is an **area** source of HAP. Under §63.6590(a)(1)(iii), a stationary RICE greater than 500 horsepower (hp) located at an area source of HAP is considered an "existing" unit if construction or reconstruction commenced before June 12, 2006. ("Construction" does not include the reinstallation of an existing engine at another location.) The unit 4 generator engine is a 4-stroke, rich burn (4SRB) SI-RICE with a site-rating of less than 500 hp. The engine was constructed in 1981; therefore it is an existing RICE under the subpart. The engine is an *Emergency Stationary RICE* as defined under §63.6675, and must comply with the requirements of §63.6640(f) as they apply to the engine, including (f)(1), (f)(2) and (f)4). Under §63.6603(a) the requirements of Table 2d, row 5 apply to the engine, including required inspection of all hoses and belts, oil change and oil filter change every 500 hours of operation or annually, and spark plug inspection every 1,000 operating hours or annually. The engine must be operated and maintained according to manufacturer emission-related instructions or under operator's maintenance plan, including operation consistent with good air pollution control practices for minimizing emissions (§63.6625(c)(3)), and must be equipped with a non-resettable hour meter (§63.6625(f)).
MACT 40 CFR 63 Subpart DDDDD	National Emission Standards for Hazardous Air Pollutants for **Industrial, Commercial, and Institutional Boilers and Process Heaters**	No		40 CFR 63, Subpart DDDDD establishes emission limits and work practice standards for industrial, commercial, or institutional boiler or process heaters, as defined in § 63.7575, that are located at or are part of a major source of HAP, as defined under § 63.2 except as specified under § 63.7491. As defined under the regulation, the facility is an area source of HAP. Further, under § 63.7506(c)(3), existing small gaseous fuel boilers and process heaters are not subject to any requirements under the subpart or of subpart A, including notification provisions. Therefore, the regulation is not applicable.
MACT 40 CFR 63, Subpart CCCCCC	National Emission Standards for Hazardous Air Pollutants for Source Category: **Gasoline Dispensing Facilities**	No		40 CFR 63, Subpart CCCCCC establishes emission limitations and management practices for HAP emitted from the loading of gasoline storage tanks at gasoline dispensing facilities (GDF) at **area** sources of HAP, including requirements for compliance demonstration. Affected sources include each GDF, each gasoline cargo tank during the delivery of product to a GDF, and each gasoline storage tank. There are no gasoline dispensing facilities, gasoline cargo tanks or gasoline storage tanks at the facility; therefore the regulation does not apply.

FEDERAL REGU-LATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
MACT 40 CFR 63 Subpart JJJJJJ	National Emission Standards for Hazardous Air Pollutants for **Industrial, Commercial, and Institutional Boilers Area Sources**	No		40 CFR 63, Subpart JJJJJJ establishes emission limits, work practice standards, emission reduction measures, and management practices for new, reconstructed, or existing affected sources that are industrial, commercial, or institutional boilers within a subcategory listed in §63.11200 and defined in §63.11237, and that are located at an area source of HAP. The facility does not have industrial, commercial or institutional boilers of one of the listed subcategories in §63.11200. Also, under § 63.11195(e), the regulation does not apply to gas-fired units. Therefore, the regulation does not apply.
40 CFR 64	**Compliance Assurance Monitoring**	No		40 CFR 64, *Compliance Assurance Monitoring* (CAM) monitoring requirements are applicable to sources that are located at a at a major source, that are required to obtain a part 70 or 71 permit, and with uncontrolled criteria pollutant emission rates equal to or exceeding the major source threshold (100 tons per year), that use a control device to achieve compliance with an emission limit or standard, and which the resulting controlled emissions are less than the major source threshold. Passive control devices such as lean-burn technology are not considered a control device as defined in 40 CFR 64 definitions and as clarified in discussions with EPA. There are no controlled emission units at the facility with uncontrolled emissions that are a major source. Therefore, the regulation is not applicable under §64.2(a).
40 CFR 68	**Chemical Accident Prevention Provisions**	No		40 CFR 68, *Chemical Accident Prevention Provisions*, is not applicable because the facility does not store any of the identified toxic and flammable substances in quantities exceeding the applicability thresholds.
40 CFR 70	**State Operating Permit Programs**	No		40 CFR 70, *State Operating Permit Programs*, is not applicable: The regulation provides for the establishment of comprehensive State air quality permitting programs consistent with the requirements of title V of the Clean Air Act (Act). New Mexico Environment Department (NMED) was delegated authority by the EPA to administer the State operating permit program through regulations adopted into the State Implementation Plant (SIP) and 20.2.70 NMAC. Although Harvest is subject to the Operating Permit Program for facilities within NMED jurisdiction as implemented by the State, there are no specific requirements of the regulation that are applicable directly to applicants. Therefore, the regulation does not apply.
40 CFR 71	**Federal Operating Permit Programs**	No		40 CFR 71, *Federal Operating Permit Programs* sets forth requirements and the corresponding standards and procedures by which the EPA Administrator issues operating permits in the absence of an approved State operating permit program. The New Mexico Environment Department (NMED) has received delegated authority to administer Title V permits under the State operating permit program approved under 40 CFR Part 70. There are no specific requirements applicable directly to applicants with facilities in NMED jurisdiction. Therefore, 40 CFR 71 does not apply.
40 CFR 72	**Permits Regulation**	No		40 CFR 72, *Permits Regulation*, is not applicable because the facility does not operate a source subject to Title IV of the Clean Air Act (CAA).
40 CFR 73	**Sulfur Dioxide Allowance System**	No		40 CFR 73, *Sulfur Dioxide Allowance System*, is not applicable to the facility because it does not operate a source subject to Title IV of the Clean Air Act (CAA).
40 CFR 75	**Continuous Emission Monitoring**	No		40 CFR 75, *Continuous Emission Monitoring*, is not applicable to the facility because it does not operate a source subject to Title IV of the Clean Air Act (CAA) and does not measure emissions with Continuous Emission Monitoring Systems (CEMS).

FEDERAL REGU-LATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
40 CFR 76	**Acid Rain Nitrogen Dioxide Emission Reduction Program**	No		40 CFR 76, *Acid Rain Nitrogen Dioxide Emission Reduction Program*, is not applicable to the facility because it does not operate a source subject to Title IV of the Clean Air Act (CAA).
40 CFR 77	**Excess Emissions**	No		40 CFR 77, *Excess Emissions*, is not applicable to the facility because it does not operate a source subject to Title IV of the Clean Air Act (CAA).
40 CFR 78	**Appeal Procedures for Acid Rain Program**	No		40 CFR 78, *Appeal Procedures for Acid Rain Program*, is not applicable to the facility because it does not operate a source subject to Title IV of the Clean Air Act (CAA).
40 CFR 82	**Protection of Stratospheric Ozone**	No		The purpose of 40 CFR 82, *Protection of Stratospheric Ozone* is to implement the *Montreal Protocol on Substances that Deplete the Ozone Layer*. Under §82.1(b), the subpart applies to anyone that produces, transforms, destroys, imports or exports a controlled substance or imports or exports a controlled product. The facility does not carry out any of the listed activities, nor does it maintain or service motor vehicle air conditioning units or refrigeration equipment. The facility does not sell, distribute, or offer for sale or distribution any product that contains ozone-depleting substances. Therefore, the subpart does not have direct applicability to the facility.
40 CFR 98	**Mandatory Greenhouse Gas Reporting**	Yes		40 CFR 98, *Mandatory Greenhouse Gas Reporting*, is a federal requirement that is applicable to facilities that include source categories listed in Subpart A, Table A-3, or to facilities with annual emissions of 25,000 metric tons of CO_2 equivalent (CO_2e) or more in combined emissions from stationary fuel combustion units, miscellaneous uses of carbonate, and all applicable source categories listed in Table A–3 and Table A–4 of Subpart A. The regulation applies to the facility as its actual annual CO_2e emissions have previously exceeded the reporting threshold as defined in Subpart A, *General Provision*, Subpart C, *General Stationary Fuel Combustion Sources*, and, as applicable, Subpart W, *Petroleum Oil and Natural Gas Systems.* The GHG emissions inventory is reported annually.
CAA Section 112(r)	**Chemical Accident Prevention Provisions**	No		CAA Section 112(r), *Chemical Accident Prevention Provisions*. The station does not store designated toxic and flammable chemicals in quantities exceeding the applicable thresholds.

State Regulations

Applicable state requirements are embodied in the New Mexico SIP, the New Mexico Administrative Code (NMAC), and the terms and conditions of any preconstruction permits issued pursuant to regulations promulgated through rulemaking under Title I of the CAA. A summary of the applicability of the NMACs is presented on the following pages.

STATE REGULATIONS APPLICABILITY CHECKLIST

STATE REGU-LATIONS CITATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
20.2.1 NMAC	**General Provisions ***	Yes	Facility	20.2.1 NMAC, *General Provisions*, establishes procedures for protecting confidential information, procedures for seeking a variance, NMAQB's authority to require sampling equipment, severability, the effective date for conformance with the NMACs, and prohibits the violation of other requirements in attempting to comply with NMACs. Although this regulation may apply to the facility, it does not impose any specific requirements.
20.2.2 NMAC	**Definitions ***	No		20.2.2 NMAC, *Definitions*, establishes definitions used throughout the remaining regulations. Although this regulation may apply to the facility, it does not impose any specific requirements on the operation of the facility as described in the permit. Therefore, the regulation is considered not applicable.
20.2.3 NMAC	**Ambient Air Quality Standards**	Yes	Facility	20.2.3 NMAC, *Ambient Air Quality Standards*, is a SIP approved regulation that limits the maximum allowable concentration of total suspended particulates (TSP), sulfur compounds, carbon monoxide (CO) and nitrogen dioxide (NO_2) in the areas of New Mexico under the jurisdiction of the Environmental Improvement Board. Under subsection 20.2.3.9, the requirements of the part are not considered applicable requirements under 20.2.70 NMAC (i.e., federally enforceable requirements), as defined by that part. However, the regulation applies to sources required to obtain a permit under 20.2.72 NMAC, and it does not limit which terms and conditions of permits issued pursuant to 20.2.72 NMAC are applicable requirements for permits issued pursuant to 20.2.70 NMAC.
20.2.5 NMAC	**Source Surveillance**	No		20.2.5 NMAC, *Source Surveillance*, establishes the NMAQB's authority to require recordkeeping/ surveillance upon request. Although this regulation may apply to the facility, it does not impose any specific requirements on the operation of the facility as described in the permit. Therefore, the regulation is considered not applicable.
20.2.7 NMAC	**Excess Emissions**	Yes	Facility	20.2.7 NMAC, *Excess Emissions*, is applicable because it prohibits excess emissions and proscribes notification procedures in the event of excess emissions.
20.2.8 NMAC	**Emissions Leaving New Mexico ***	No		20.2.8 NMAC, *Emissions Leaving New Mexico*, establishes prohibitions on the release of pollutants that cross New Mexico State boundaries. Although this regulation may apply to the facility, it does not impose any specific requirements on the operation of the facility as described in the permit. Therefore, the regulation is considered not applicable.

STATE REGU-LATIONS CITATION	**Title**	**Applies? Enter Yes or No**	**Unit(s) or Facility**	**JUSTIFICATION:**
20.2.33 NMAC	**Gas Burning Equipment - Nitrogen Dioxide**	No		20.2.33 NMAC, *Gas Burning Equipment - Nitrogen Dioxide*, does not apply to the station because the compressor station does not include new or existing gas burning equipment (external combustion emission sources, such as gas fired boilers and heaters) 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		20.2.34 NMAC, *Oil Burning Equipment: NO_2*, does not apply to the station because the compressor station does not have oil burning equipment.
20.2.35 NMAC	**Natural Gas Processing Plant – Sulfur**	No		20.2.35 NMAC, *Natural Gas Processing Plant – Sulfur*, applies to new natural gas processing plants for which a modification commenced on or after July 1, 1974. The regulation is not applicable to the station because the facility is not a natural gas processing plant.
20.2.38 NMAC	**Hydrocarbon Storage**	No		20.2.38 NMAC, *Hydrocarbon Storage Facilities*, is not applicable because the facility does not store hydrocarbons containing hydrogen sulfide; does not have a hydrocarbon liquid throughput of 50,000 barrels or greater located within a municipality or within five miles of a municipality with population of 20,000 or more; nor is there a new hydrocarbon tank battery with storage capacity of 65,000 gallons or greater.
20.2.61.109 NMAC	**Smoke & Visible Emissions**	Yes	Turbine units 1, 2, 3, 6 & 7; Emergency generator RICE unit 4; Fuel gas heater unit 5	20.2.61 NMAC, *Smoke and Visible Emissions*, limits visible emissions from stationary combustion equipment to less than 20 percent opacity. The station combustion turbines, emergency generator engine and fuel gas heater are subject to the regulation as they are each stationary combustion sources.
20.2.70 NMAC	**Operating Permits**	Yes		20.2.70 NMAC, *Operating Permits*, contains permitting requirements for major sources of criteria and hazardous air pollutants subject to Part 70 (Title V) permitting requirements. The facility Potential To Emit for criteria pollutants and greenhouse gases exceeds the major source Title V permitting thresholds. Therefore, the regulation is applicable. The facility is currently permitted under Title V Operating Permit No. **P023-R3-M1**. (At the time application submittal, an Operating Permit modification application P023-R3-M2 is also currently under NMAQB review.)
20.2.71 NMAC	**Operating Permit Fees**	Yes		20.2.71 NMAC, *Operating Permit Emission Fees*, specifies fees for emissions from facilities subject to Part 70 (Title V) permitting requirements under 20.2.70 NMAC. The regulation is applicable as the facility is subject to permitting requirements under 20.2.70 NMAC.
20.2.72 NMAC	**Construction Permits**	Yes		20.2.72 NMAC, *Construction Permits*, requires a construction [NSR] permit for stationary source with emissions greater than 10 pounds per hour or 25 tons per year of criteria pollutants. The station emissions exceed the permit requirement thresholds; therefore, the station is required to apply for and obtain an NSR permit. The construction (NSR) permit issued under 20.2.72 for this facility is permit No. **0339-M8**, as revised in **–R1** (removal of Gasoline Dispensing Facility tank T9).

STATE REGU-LATIONS CITATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
20.2.73 NMAC	**NOI & Emissions Inventory Requirements**	Yes		20.2.73 NMAC requires that owners/operators intending to construct a new stationary source that has a potential emission rate (uncontrolled emissions) greater than 10 tons per year of any regulated air contaminant, or 1 ton per year of lead, must file a notice of intent (NOI) with the department. The station emits regulated air pollutants in amounts greater than 10 tons per year. Therefore, the facility is subject to the regulation. The requirement to file an NOI with the Department is fulfilled with the application for a construction permit under 20.2.72 NMAC.
20.2.74 NMAC	**Permits – PSD**	Yes	Facility	20.2.74 NMAC, Permits, Prevention of Significant Deterioration (PSD), provides requirements for sources subject to permit requirements for PSD facilities. The facility emissions exceed the PSD permit threshold levels. Therefore, the regulation is applicable. If the facility implements all of the requested changes in the application (TBD), the facility emissions will decrease to below 250 tpy, and the facility will then be a minor source under PSD.
20.2.75 NMAC	**Construction Permit Fees**	Yes		20.2.75 NMAC, *Construction Permit Fees*, establishes the fee schedule associated with the filing of permits and permit revisions. The regulation is applicable to the facility for its construction permit submitted under 20.2.72 NMAC.
20.2.77 NMAC	**New Source Performance Standards**	Yes	Turbine units 3, 6 & 7; turbine units 8 & 9 Potentially applicable to new centrifugal compressors, pneumatic controllers, and the collection of fugitive emissions components	20.2.77 NMAC, *New Source Performance Standards*, incorporates by reference specific Standards of Performance for New Stationary Sources (NSPS) codified under 40 CFR 60, as amended through January 15, 2017. The facility includes equipment that are subject or potentially subject to NSPS subparts A, GG, KKKK, and OOOOa.
20.2.78 NMAC	**Emission Standards for HAPS**	No		20.2.78 NMAC, *Emission Standards for Hazardous Air Pollutants*, incorporates by reference specific National Emission Standards for Hazardous Air Pollutants (NESHAPs) codified under 40 CFR 61, as amended through January 15, 2017. The regulation is not applicable as none of the emission units at the facility are subject to any NESHAP under 40 CFR 61.
20.2.79 NMAC	**Permits – Nonattainment Areas**	No		20.2.79 NMAC, *Permits - Nonattainment Areas*, is not applicable to the station because the compressor station is not located within a non-attainment area.
20.2.80 NMAC	**Stack Heights**	Yes		20.2.80 NMAC, *Stack Heights*, establishes guidelines for the selection of an appropriate stack height for the purposes of atmospheric dispersion modeling. Atmospheric dispersion modeling is provided in support of this construction permit modification application.

STATE REGU-LATIONS CITATION	**Title**	**Applies? Enter Yes or No**	**Unit(s) or Facility**	**JUSTIFICATION:**
20.2.82 NMAC	**MACT Standards for source categories of HAPS**	Yes	Emergency generator RICE unit 4	20.2.82 NMAC, *Maximum Achievable Control Technology Standards for Source Categories of Hazardous Air Pollutants*, incorporates by reference specified federal Maximum Available Control Technology (MACT) Standards codified in 40 CFR 63, as amended through January 15, 2017. The facility includes equipment that are subject to MACT subparts A and ZZZZ.
20.2.84 NMAC	**Acid Rain Permits**	No		20.2.84 NMAC, *Acid Rain Permits*, is not applicable to the station because the compressor station does not operate an affected unit under the regulation.

* = These NMACs are administrative in nature and do not establish prohibitions, standards, or requirements.

Section 14

Operational Plan to Mitigate Emissions

(Submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

[X] **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.

[X] **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.

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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.

Not applicable.

Section 16

Air Dispersion Modeling

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

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

Check each box that applies:

☐ See attached, approved modeling **waiver for all** pollutants from the facility.

☐ See attached, approved modeling **waiver for some** pollutants from the facility.

☒ Attached in Universal Application Form 4 (UA4) is a **modeling report for all** pollutants from the facility.

☐ Attached in UA4 is a **modeling report for some** pollutants from the facility.

☐ No modeling is required.

An ambient air quality impact analysis including dispersion modeling is being submitted in the permit application for the proposed permit modification. The dispersion modeling demonstrates that the proposed modifications will comply with the National Ambient Air Quality Standards and applicable PSD increments.

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.

Summary

The La Jara Compressor Station permit is being modified to allow the option of replacing two turbines. Modeling was conducted using Navajo Lake (2016) meteorological data to ensure the proposed changes will comply with the nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), particulate matter less than 10 micrometers (PM_{10}), and particulate matter less than 2.5 micrometers ($PM_{2.5}$) National Ambient Air Quality Standards (NAAQS, New Mexico Ambient Air Quality Standards (NMAAQS), and Prevention of Significant Deterioration (PSD) allowable increment. There were no significant CO, SO_2, or PM_{10} impacts. NO_2 and $PM_{2.5}$ impacts comply with the standards and allowable increment.

16-A: Identification

1	Name of facility:	**La Jara Compressor Station**
2	Name of company:	**Harvest Four Corners, LLC**
3	Current Permit number:	**0339-M8 & P023-R3-M1**
4	Name of applicant's modeler:	**James Newby**
5	Phone number of modeler:	**(801) 294-3024**
6	E-mail of modeler:	**jwnewby@comcast.net**

The La Jara Compressor Station currently operates under a construction permit issued by the New Mexico Air Quality Bureau (NMAQB), 339-M8, dated November 6, 2018. This permit approves operation of the following combustion sources: two Solar Centaur T-4000 natural gas-fired turbines (Units 1 & 2), one Solar Centaur T4700 natural gas-fired turbine (Unit 3), one Waukesha F3521G natural gas-fired emergency generator (Unit 4), one Sivalls 1H-246 fuel gas heater (Unit 5), and two Solar Centaur T-4700S natural gas-fired turbines (Units 6 & 7).

The emergency generator and fuel gas heater were not included in the modeling. The emergency generator is an exempt source under 20.2.72.202.B(3) of the New Mexico Administrative Code (NMAC). It is operated less than 500 hours per year and only during the unavoidable loss of commercial utility power. The fuel gas heater is an exempt source under 20.2.72.202.B(5) NMAC. Potential emissions are less than 0.5 tons per year of any pollutant for which a NAAQS or NMAAQS applies.

The facility is located in Section 17, Range 6 West, Township 30 North, at approximately 277,743 meters Easting, 4,077,491 meters Northing, Zone 13, North American Datum 1983 (NAD83), at an elevation of approximately 6,325 feet above mean sea level.

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.		
	Replace one or both Solar Centaur T-4000 turbines (Units 1 & 2) with Solar Centaur T-4700S natural gas-fired turbines (Units 8 & 9); **Adjust the Solar Centaur T4700 turbine (Unit 3) fuel consumption and stack parameter calculations using Solar Turbine data from previous applications. The result is a small decrease in SO_2 and particulate emissions;** **Increase the Solar Centaur T4700S turbine (Units 6 & 7) NO_X emissions from 15.90 to 15.93 tons per year, in accordance with Solar Turbine data from previous applications. Also, adjust the fuel consumption and stack parameter calculations using Solar Turbine data from previous applications. The result is a small decrease in SO_2 and particulate emissions; and** **Remove emission limits for the emergency generator (Unit 4). The current permit identifies the generator as an exempt source, but includes emission limits.**		
4	What geodetic datum was used in the modeling?	**WGS84**	
5	How long will the facility be at this location?	**Indefinitely**	
6	Is the facility a major source with respect to Prevention of Significant Deterioration (PSD)?	**Yes☒**	No☐
7	Identify the Air Quality Control Region (AQCR) in which the facility is located	**014**	
8	List the PSD baseline dates for this region (minor or major, as appropriate). **Major Source Baseline Dates**		
	NO2	**February 8, 1988**	
	SO2	**January 6, 1975**	
	PM10	**January 6, 1975**	
	PM2.5	**October 20, 2010**	
9	Provide the name and distance to Class I areas within 50 km of the facility (300 km for PSD permits).		
	N/A - The nearest Class I area (Weminuche Wilderness Area) is located approximately 67.1 kilometers away.		
10	Is the facility located in a non-attainment area? If so describe below	Yes☐	**No☒**
	N/A		
11	Describe any special modeling requirements, such as streamline permit requirements.		
	N/A		

As there are no Class I areas located within 50 kilometers of the facility, the modeling of PSD increment consumption at nearby Class I areas was not included in the analysis.

The facility is located in Air Quality Control Region (AQCR) 014, an attainment area for all pollutants; therefore, non-attainment modeling impacts were not considered.

16-C: Modeling History of Facility

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

	Pollutant	Latest permit and modification number that modeled the pollutant facility-wide.	Date of Permit	Comments
1	CO	**0393-M6**	**05/23/2014**	**N/A**
	NO_2	**0393-M6**	**05/23/2014**	**N/A**
	SO_2	**N/A**	**N/A**	**N/A**
	H_2S	**N/A**	**N/A**	**N/A**
	PM2.5	**0393-M6**	**05/23/2014**	**N/A**
	PM10	**0393-M6**	**05/23/2014**	**N/A**
	TSP	**N/A**	**N/A**	**N/A**
	Lead	**N/A**	**N/A**	**N/A**
	Ozone (PSD only)	**N/A**	**N/A**	**N/A**
	NM Toxic Air Pollutants (20.2.72.402 NMAC)	**N/A**	**N/A**	**N/A**

16-D: Modeling Performed for this Application

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

	Pollutant	ROI	Cumulative analysis	Culpability analysis	Waiver approved	Pollutant not emitted or not changed.
1	CO	☒	☐	☐	☐	☐
	NO_2	☐	☒	☐	☐	☐
	SO_2	☒	☐	☐	☐	☐
	H_2S	☐	☐	☐	☐	☒
	PM2.5	☐	☒	☐	☐	☐
	PM10	☒	☐	☐	☐	☐
	TSP	☐	☐	☐	☐	☒
	Lead	☐	☐	☐	☐	☒
	Ozone	☐	☐	☐	☐	☒
	State air toxic(s) (20.2.72.402 NMAC)	☐	☐	☐	☐	☒

The following table identifies the applicable significant impact levels (SIL), NAAQS and NMAAQS:

Pollutant	Averaging Period	SIL ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)	NMAAQS ($\mu g/m^3$)
NO_2	1-Hour	7.52	188.03	--
NO_2	24-Hour	5.0	--	188.03
NO_2	Annual	1.0	99.66	94.02
CO	1-Hour	2,000	40,069.6	14,997.5
CO	8-Hour	500	10,303.6	9,960.1
SO_2	1-Hour	7.8	196.4	--
SO_2	3-Hour	25.0	1,309.3	--
SO_2	24-Hour	5.0	--	261.9
SO_2	Annual	1.0	--	52.4
PM_{10}	24-Hour	5.0	150	--
$PM_{2.5}$	24-Hour	1.2	35	--
$PM_{2.5}$	Annual	0.2	12	--

The evaluation of standards was conducted in accordance with the following guidance provided in the *NMAQB Air Dispersion Modeling Guidelines, Revised June 6, 2019* (NMAQB Modeling Guidelines):

- **A demonstration of compliance with the NO_2 1-hour NAAQS is considered by the NMAQB to be a demonstration of compliance with the NO_2 24-hour NMAAQS.**
- **A demonstration of compliance with the CO 1-hour and 8-hour NMAAQS is considered by the NMAQB to be a demonstration of compliance with the CO 1-hour and 8-hour NAAQS.**
- **A demonstration of compliance with the SO_2 1-hour NAAQS is considered by the NMAQB to be a demonstration of compliance with the other SO_2 NAAQS & NMAAQS.**
- **PM_{10} emissions will be equal to $PM_{2.5}$ emissions; therefore, a demonstration of compliance with the $PM_{2.5}$ NAAQS is considered by the NMAQB to be a demonstration of compliance with the PM_{10} NAAQS.**

The facility will continue to be a PSD major source (permitted NO_2 emissions will exceed 250 tpy if neither Unit 1 nor Unit 2 is upgraded). However, the emissions increases associated with the modifications do not constitute a major modification.

The following table identifies the SIL and allowable increment.

Pollutant	Averaging Period	Area Type	SIL ($\mu g/m^3$)	Allowable Increment ($\mu g/m^3$)
NO_2	Annual	Class II	1.0	25
SO_2	3-Hour	Class II	25.0	512
SO_2	24-Hour	Class II	5.0	91
SO_2	Annual	Class II	1.0	20
PM_{10}	24-Hour	Class II	5.0	30
PM_{10}	Annual	Class II	1.0	17
$PM_{2.5}$	24-Hour	Class II	1.2	9
$PM_{2.5}$	Annual	Class II	0.2	4

The SO_2, PM_{10}, and $PM_{2.5}$ short-term increments are not to be exceeded more than once per year.

16-E: New Mexico Toxic Air Pollutants Modeling

1	List any New Mexico toxic air pollutants (NMTAPs) from Tables A and B in 20.2.72.502 NMAC that are modeled for this application. **N/A**					
2	List any NMTAPs that are emitted but not modeled because stack height correction factor. Add additional rows to the table below, if required.					
	Pollutant	Emission Rate (pounds/hour)	Emission Rate Screening Level (pounds/hour)	Stack Height (meters)	Correction Factor	Emission Rate/ Correction Factor

	N/A					

16-F: Modeling Options

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

The Oris Solutions BEEST for Windows modeling manager was used to prepare the input files and manage processing. Except when converting NO_X impacts to NO_2 impacts using Ambient Ratio Method 2 (ARM2), the Environmental Protection Agency (EPA) recommended defaults will be used. As the station is located in a rural area, urban area modeling will not be conducted.

Note: In order to use ARM2 with a minimum NO_2/NO_X ratio of less than 0.5, AERMOD must be run using the non-default setting.

16-G: Surrounding Source Modeling

1	Date of surrounding source retrieval:	**December 10, 2019**
2	If the surrounding source inventory provided by the Air Quality Bureau was believed to be inaccurate, describe how the sources modeled differ from the inventory provided. If changes to the surrounding source inventory were made, use the table below to describe them. Add rows as needed.	
	AQB Source ID	Description of Corrections
	N/A	

Cumulative NO_2 impacts used to demonstrate compliance with the NAAQS and NMAAQS may be calculated as facility impacts plus background concentrations <u>or</u> may be calculated as facility plus neighboring source impacts. Cumulative NO_2 1-hour average impacts (for comparison with the NAAQS) were determined using the facility plus neighboring source option. In this case, as identified in the NMAQB Modeling Guidelines, neighboring sources include all NO_2 sources within 25 kilometers of the facility and all NO_2 sources between 25 and 50 kilometers from the facility that are permitted to emit 1,000 pounds of per hour or more.

Cumulative $PM_{2.5}$ impacts used to demonstrate compliance with the NAAQS <u>must</u> be calculated as facility and neighboring source impacts, plus secondary $PM_{2.5}$ formation concentrations, plus background concentrations. Therefore, cumulative $PM_{2.5}$ impacts (for comparison with the NAAQS) were determined using neighboring sources. In this case, neighboring sources include all sources within 10 kilometers of the facility.

Cumulative impacts to demonstrate compliance with allowable PSD increment consumption <u>must</u> be calculated as facility and neighboring source impacts, using all increment consuming sources. Therefore, cumulative NO_2 and $PM_{2.5}$ impacts (for comparison with allowable PSD increment) were determined using neighboring sources. In this case, neighboring sources include all increment consuming sources within 25 kilometers of the facility and all increment consuming sources between 25 and 50 kilometers from the facility that are permitted to emit 1,000 pounds per hour or more.

16-H: Building and Structure Downwash

1	How many buildings are present at the facility?	**19**
2	How many above ground storage tanks are present at the facility?	**14**

3	Was building downwash modeled for all buildings and tanks? If not explain why below.	**Yes☒**	No☐
	N/A		
4	Building comments:	**N/A**	

16-I: Receptors and Modeled Property Boundary

1	"Restricted Area" is an area to which public entry is effectively precluded. Effective barriers include continuous fencing, continuous walls, or other continuous barriers approved by the Department, such as rugged physical terrain with a steep grade that would require special equipment to traverse. If a large property is completely enclosed by fencing, a restricted area within the property may be identified with signage only. Public roads cannot be part of a Restricted Area. A Restricted Area is required in order to exclude receptors from the facility property. If the facility does not have a Restricted Area, then receptors shall be placed within the property boundaries of the facility. Describe the fence or other physical barrier at the facility that defines the restricted area.		
	Fence		
2	Receptors must be placed along publicly accessible roads in the restricted area. Are there public roads passing through the restricted area?	Yes☐	**No☒**
3	Are restricted area boundary coordinates included in the modeling files?	**Yes☒**	No☐

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

Grid Type	Shape	Spacing	Start distance from restricted area or center of facility	End distance from restricted area or center of facility	Comments
Discrete	**Rectangle**	**50**	**0 meters**	**500 meters**	**N/A**
Discrete	**Rectangle**	**100**	**500 meters**	**1,000 meters**	**N/A**
Discrete	**Rectangle**	**250**	**1,000 meters**	**3,000 meters**	**N/A**
Discrete	**Rectangle**	**500**	**3,000 meters**	**5,000 meters**	**N/A**
Discrete	**Rectangle**	**1,000**	**5,000 meters**	**10,000 meters**	**N/A**
Discrete	**Rectangle**	**2,000**	**10,000 meters**	**34,000 meters**	**N/A**

5	Describe receptor spacing along the fence line.
	25-meter spacing
6	Describe the PSD Class I area receptors.
	N/A

Significant impact modeling was conducted using the rectangular discrete cartesian receptor grid defined in Table 16-I above. NO_2 1-hour average impacts were determined using the entire grid defined above. NO_2 annual average impacts and all CO, SO_2, PM_{10}, and $PM_{2.5}$ impacts were determined using the 50, 100, 250, and 500-meter spacing portions of the grid.

Cumulative impact modeling was conducted using only those receptors from the grids defined in the paragraph above for which there are significant impacts.

A maximum cumulative impact greater than 75 percent of the NAAQS NO_2 1-hour average standard occurred at one receptor in the 250-meter interval portion of the grid. This receptor was surrounded by a 50-meter interval grid so as to identify the local high. This refined grid was included with the receptor grid defined above and used for the NAAQS NO_2 1-hour average significant impact modeling.

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☒**
	N/A		
2	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

	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).
1	**Four scenarios were modeled. Scenario 0 assumed Units 1 & 2 will continue to operate at the facility. Scenario 1 assumed Unit 1 will be replaced with Unit 8 and Unit 2 will continue to operate at the facility. Scenario 2 assumed Unit 1 will remain in operation and Unit 2 will be replaced with Unit 9. Scenario 3 assumed Units 1 & 2 will be replaced with Units 8 & 9.** **Significant impact modeling was conducted using all new or modified facility sources. Units 1 & 2 were not included as no changes are being made to their emission rates or stack parameters. For simplicity, Units 3, 6 & 7 were included since there were small changes being made to their calculated stack parameters (emission rates will be unchanged or decreased). Units 8 & 9 were included in the scenarios for which they will be present at the facility.** **NAAQS and NMAAQS cumulative impact modeling were conducted using all facility sources that will be present for the particular scenario.** **PSD increment consumption modeling was conducted using all increment consuming La Jara Compressor Station sources that will be present for a particular scenario.**
	Which scenario produces the highest concentrations? Why?
2	**Scenario 0 produced the highest facility NO_2 1-hour average impacts, because the existing Units 1 & 2 have higher emissions rates and produce higher short-term impacts than the new Units 8 & 9.** **Scenario 3 produced the highest facility NO_2 annual average impacts, because even though the existing Units 1 & 2 have higher emissions rates, they produce lower annual average impacts than the new Units 8 & 9.** **There were no significant CO, SO_2 or PM_{10} impacts.** **Scenarios 0, 1 & 2 did not produce significant $PM_{2.5}$ impacts. Consequently, scenario 3 produced the highest NAAQS and PSD $PM_{2.5}$ impacts.**
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.											
	N/A											
6	Were different emission rates used for short-term and annual modeling? If so describe below.									Yes☐		No☐
	N/A											

The modeling was conducted in accordance with the approved protocol and the NMAQB Modeling Guidelines.

First, emissions from all new or modified La Jara Compressor Station sources were modeled to determine if there were significant impacts. For pollutant averaging periods where maximum impacts were less than the SIL, no additional modeling was conducted.

Second, where pollutant impacts exceed the SIL, cumulative impacts for comparison with the NAAQS, NMAAQS and allowable PSD increment consumption were determined using one of the methodologies identified in the NMAQB Modeling Guidelines.

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.	
	All NO2 modeling was conducted using ARM2.	
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☒**
	Since the sources at the facility are all Solar turbines, an NO_2/NO_X ratio of 0.2 was used for all the NO2 modeling. **In February 2012, Solar Turbines provided stack test data to the NMAQB showing that their turbines have NO_2/NO_X ratios less than 0.2. The EPA NO_2 In-Stack Database (from the Support Center for Regulatory Atmospheric Modeling (SCRAM) website) does not contain any data for turbines of the size present at the La Jara Compressor Station. However, the EPA NO_2 In-Stack Alpha Database (from the same website) contains data for three Solar Centaur T-4702 turbines (reporting entity is San Joaquin Valley APCD [CA]). The values are 0.1011, 0.1242, and 0.0843 (see rows 1347-1349). A copy of the Alpha database is provided in the Harvest – La Jara – April 2020 – Modeling Report. zip file on the modeling CD submitted with the application.**	
4	Describe the design value used for each averaging period modeled.	
	1-hour: **High eighth high** Annual: **One Year Annual Average**	

16-M: Particulate Matter Modeling

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

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

NO_X (ton/yr)	SO_2 (ton/yr)	$[PM2.5]_{annual}$	$[PM2.5]_{24\text{-hour}}$
168.09	**2.67**	**0.0108**	**0.1889**

$PM_{2.5}$ secondary formation concentrations were calculated using the equations in Section 2.6.6 of the NMAQB Modeling Guidelines.
The values in the table above apply only to scenario 3, as it was the only scenario that produced significant $PM_{2.5}$ impacts.

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
1	**TUR_1**
2	**TUR_2**
3	**TUR_3**
6	**TUR_6**
7	**TUR_7**
8	**TUR_8**
9	**TUR_9**

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☐
	N/A		
3	Have the minor NSR exempt sources or Title V Insignificant Activities" (Table 2-B) sources been modeled?	Yes☐	**No☒**

4 Which units consume increment for which pollutants?

Unit ID	NO_2	SO_2	PM10	PM2.5
1	**No**	**No**	**No**	**No**
2	**No**	**No**	**No**	**No**
3	**Yes**	**Yes**	**Yes**	**No**
6	**Yes**	**Yes**	**Yes**	**No**
7	**Yes**	**Yes**	**Yes**	**No**
8	**Yes**	**Yes**	**Yes**	**Yes**
9	**Yes**	**Yes**	**Yes**	**Yes**

5	PSD increment description for sources (for unusual cases, i.e., baseline unit expanded emissions after baseline date).	**N/A**

6	Are all the actual installation dates included in Table 2A of the application form, as required? This is necessary to verify the accuracy of PSD increment modeling. If not please explain how increment consumption status is determined for the missing installation dates below.	**Yes☒**	No☐
	N/A		

16-P: Flare Modeling

1 For each flare or flaring scenario, complete the following

	Flare ID (and scenario)	Average Molecular Weight	Gross Heat Release (cal/s)	Effective Flare Diameter (m)
	N/A			

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☒**
	The only volume sources are those provided by MergeMaster.		
2	Describe the determination of sigma-Y and sigma-Z for fugitive sources.		
	The only volume sources are those provided by MergeMaster.		
3	Describe how the volume sources are related to unit numbers. Or say they are the same.		
	The only volume sources are those provided by MergeMaster.		
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: **Navajo Dam (350450018)**		
	$PM_{2.5}$: Choose an item. **Farmington (1FO, 350450019)**		
	PM_{10}: **N/A**		
	SO_2: **N/A**		
	Other: **N/A**		
	Comments: **N/A**		
2	Were background concentrations refined to monthly or hourly values? If so describe below.	Yes☐	**No☒**
	N/A		

Cumulative NO_2 impacts used to demonstrate compliance with the NAAQS and NMAAQS may be calculated as facility impacts plus background concentrations <u>or</u> may be calculated as facility plus neighboring source impacts. In this analysis, cumulative NO_2 annual average impacts (for comparison with the NAAQS) were determined using the facility plus background concentration option. Table 16 (Navajo Dam), in the NMAQB Modeling Guidelines, identifies an annual background concentration of 11.0 µg/m^3. This value was used to determine the high cumulative NO_2 annual average impact.

Cumulative $PM_{2.5}$ impacts used to demonstrate compliance with the NAAQS <u>must</u> be calculated as facility and neighboring source impacts, plus secondary $PM_{2.5}$ formation concentrations, plus background concentrations. Table 18 (Farmington), in the NMAQB Modeling Guidelines, identifies 24-hour (98th%ile) and annual background concentrations of 11.77 µg/m^3 and 4.19 µg/m^3, respectively. These values were used to determine the high cumulative $PM_{2.5}$ impacts.

16-S: Meteorological Data

1	Was NMED provided meteorological data used? If so, select the station used. **Navajo Lake (2016)**	**Yes☒**	No☐
2	If NMED provided meteorological data was not used describe the data set(s) used below. Discuss how missing data were handled, how stability class was determined, and how the data were processed.		
	N/A		

16-T: Terrain

1	Was complex terrain used in the modeling? If not, describe why below.	**Yes☒**	No☐
	N/A		
2	What was the source of the terrain data?		
	Terrain elevation data for sources and structures within the fence line were obtained from a plot plan provided by Harvest.		

	Terrain elevation data for all receptors and for structures outside the fence line were obtained from the USGS National Map – Data Delivery website. First, the ArcGrid data (1/3 second) obtained from the website was converted into .tif files. Then, the AERMOD Terrain Preprocessor (AERMAP) was used to calculate the receptor elevations and terrain maximums. The domain used to calculate terrain maximums was sufficient to identify all terrain nodes that create a slope greater than or equal to 10 percent.

16-U: Modeling Files

Describe the modeling files:

	File name (or folder and file name)	Pollutant(s)	Purpose (ROI/SIA, cumulative, culpability analysis, other)
1	**Harvest – La Jara – April 2020 – AERMAP Files.zip**	**N/A**	
	Harvest – La Jara – April 2020 – AERMOD (ROI).zip	**NO_2, CO, SO_2, PM_{10} &$PM_{2.5}$**	**ROI/SIA**
	Harvest – La Jara – April 2020 – AERMOD (NAAQS).zip	**NO_2 & $PM_{2.5}$**	**Cumulative**
	Harvest – La Jara – April 2020 – AERMOD (PSD).zip	**NO_2 & $PM_{2.5}$**	**Cumulative**
	Harvest – La Jara – April 2020 – Modeling Calculations.zip	**N/A**	
	Harvest – La Jara – April 2020 – Neighboring Sources.zip	**N/A**	
	Harvest – La Jara – April 2020 – Modeling Protocol.zip	**N/A**	
	Harvest – La Jara – April 2020 – Modeling Report.zip	**N/A**	

16-V: PSD New or Major Modification Applications

1	A new PSD major source or a major modification to an existing PSD major source requires additional analysis. Was preconstruction monitoring done (see 20.2.74.306 NMAC and PSD Preapplication Guidance on the AQB website)?	Yes☐	**No☒**
2	If not, did AQB approve an exemption from preconstruction monitoring?	Yes☐	**No☒**
3	Describe how preconstruction monitoring has been addressed or attach the approved preconstruction monitoring or monitoring exemption.		
	N/A, this is not a PSD new source or major modification.		
4	Describe the additional impacts analysis required at 20.2.74.304 NMAC.		
	N/A		
5	If required, have ozone and secondary PM2.5 ambient impacts analyses been completed? If so describe below.	Yes☐	**No☒**
	N/A		

16-W: Modeling Results

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

Pollutant, Time Period and Standard	Modeled Facility Concentration (µg/m3)	Modeled Concentration with Surrounding Sources (µg/m3)	Secondary PM (µg/m3)	Background Concentration (µg/m3)	Cumulative Concentration (µg/m3)	Value of Standard (µg/m3)	Percent of Standard	Location		
								UTM E (m)	UTM N (m)	Elevation (ft)
NO_2 1-Hour NAAQS (Scenario 0)	**141.96**	**154.23**	**--**	**--**	**154.23**	**188.03**	**82.02**	**276,350**	**4,079,700**	**6,246**
NO_2 1-Hour NAAQS (Scenario 1)	**140.81**	**167.48**	**--**	**--**	**167.48**	**188.03**	**89.07**	**276,250**	**4,079,700**	**6,285**
NO_2 1-Hour NAAQS (Scenario 2)	**139.46**	**167.48**	**--**	**--**	**167.48**	**188.03**	**89.07**	**276,250**	**4,079,700**	**6,285**
NO_2 1-Hour NAAQS (Scenario 3)	**133.05**	**167.48**	**--**	**--**	**167.48**	**188.03**	**89.07**	**276,250**	**4,079,700**	**6,285**
NO_2 Annual NAAQS (Scenario 0)	**7.47**	**--**	**--**	**11.00**	**18.47**	**99.66**	**18.53**	**277,500**	**4,077,450**	**6,382**
NO_2 Annual NAAQS (Scenario 1)	**7.92**	**--**	**--**	**11.00**	**18.98**	**99.66**	**18.98**	**277,550**	**4,077,500**	**6,358**
NO_2 Annual NAAQS (Scenario 2)	**7.95**	**--**	**--**	**11.00**	**18.95**	**99.66**	**19.02**	**277,550**	**4,077,500**	**6,358**
NO_2 Annual NAAQS (Scenario 3)	**8.63**	**--**	**--**	**11.00**	**19.70**	**99.66**	**19.70**	**277,550**	**4,077,500**	**6,358**
NO_2 Annual NMAAQS (Scenario 0)	**7.47**	**--**	**--**	**11.00**	**18.47**	**94.02**	**19.64**	**277,500**	**4,077,450**	**6,382**
NO_2 Annual NMAAQS (Scenario 1)	**7.92**	**--**	**--**	**11.00**	**18.98**	**94.02**	**20.12**	**277,550**	**4,077,500**	**6,358**
NO_2 Annual NMAAQS (Scenario 2)	**7.95**	**--**	**--**	**11.00**	**18.95**	**94.02**	**20.16**	**277,550**	**4,077,500**	**6,358**
NO_2 Annual NMAAQS (Scenario 3)	**8.63**	**--**	**--**	**11.00**	**19.70**	**94.02**	**20.88**	**277,550**	**4,077,500**	**6,358**
NO_2 Annual PSD (Scenario 0)	**7.47**	**9.61**	**--**	**--**	**9.61**	**25**	**38.43**	**277,500**	**4,077,450**	**6,382**
NO_2 Annual PSD (Scenario 1)	**7.92**	**10.06**	**--**	**--**	**10.06**	**25**	**40.23**	**277,550**	**4,077,500**	**6,358**
NO_2 Annual PSD (Scenario 2)	**7.95**	**10.09**	**--**	**--**	**10.09**	**25**	**40.37**	**277,550**	**4,077,500**	**6,358**
NO_2 Annual PSD (Scenario 3)	**8.63**	**10.77**	**--**	**--**	**10.77**	**25**	**43.09**	**277,550**	**4,077,500**	**6,358**
CO 1-Hour NMAAQS (Scenario 0)	**131.14**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**

Pollutant, Time Period and Standard	Modeled Facility Concentration (µg/m3)	Modeled Concentration with Surrounding Sources (µg/m3)	Secondary PM (µg/m3)	Background Concentration (µg/m3)	Cumulative Concentration (µg/m3)	Value of Standard (µg/m3)	Percent of Standard	Location		
								UTM E (m)	UTM N (m)	Elevation (ft)
CO 1-Hour NMAAQS (Scenario 1)	**162.64**	--	--	--	--	--	--	--	--	--
CO 1-Hour NMAAQS (Scenario 2)	**161.28**	--	--	--	--	--	--	--	--	--
CO 1-Hour NMAAQS (Scenario 3)	**195.35**	--	--	--	--	--	--	--	--	--
CO 8-Hour NMAAQS (Scenario 0)	**42.00**	--	--	--	--	--	--	--	--	--
CO 8-Hour NMAAQS (Scenario 1)	**50.23**	--	--	--	--	--	--	--	--	--
CO 8-Hour NMAAQS (Scenario 2)	**53.48**	--	--	--	--	--	--	--	--	--
CO 8-Hour NMAAQS (Scenario 3)	**67.45**	--	--	--	--	--	--	--	--	--
SO_2 1-Hour NAAQS (Scenario 0)	**3.65**	--	--	--	--	--	--	--	--	--
SO_2 1-Hour NAAQS (Scenario 1)	**4.53**	--	--	--	--	--	--	--	--	--
SO_2 1-Hour NAAQS (Scenario 2)	**4.50**	--	--	--	--	--	--	--	--	--
SO_2 1-Hour NAAQS (Scenario 3)	**5.45**	--	--	--	--	--	--	--	--	--
SO_2 3-Hour PSD (Scenario 0)	**1.65**	--	--	--	--	--	--	--	--	--
SO_2 3-Hour PSD (Scenario 1)	**2.21**	--	--	--	--	--	--	--	--	--
SO_2 3-Hour PSD (Scenario 2)	**2.23**	--	--	--	--	--	--	--	--	--
SO_2 3-Hour PSD (Scenario 3)	**3.15**	--	--	--	--	--	--	--	--	--
SO_2 24-Hour PSD (Scenario 0)	**0.45**	--	--	--	--	--	--	--	--	--
SO_2 24-Hour PSD (Scenario 1)	**0.56**	--	--	--	--	--	--	--	--	--
SO_2 24-Hour PSD (Scenario 2)	**0.59**	--	--	--	--	--	--	--	--	--
SO_2 24-Hour PSD (Scenario 3)	**0.74**	--	--	--	--	--	--	--	--	--
SO_2 Annual PSD (Scenario 0)	**0.08**	--	--	--	--	--	--	--	--	--
SO_2 Annual PSD (Scenario 1)	**0.09**	--	--	--	--	--	--	--	--	--
SO_2 Annual PSD (Scenario 2)	**0.09**	--	--	--	--	--	--	--	--	--
SO_2 Annual PSD (Scenario 3)	**0.11**	--	--	--	--	--	--	--	--	--

Pollutant, Time Period and Standard	Modeled Facility Concentration (µg/m3)	Modeled Concentration with Surrounding Sources (µg/m3)	Secondary PM (µg/m3)	Background Concentration (µg/m3)	Cumulative Concentration (µg/m3)	Value of Standard (µg/m3)	Percent of Standard	Location		
								UTM E (m)	UTM N (m)	Elevation (ft)
PM_{10} 24-Hour PSD (Scenario 0)	**0.87**	--	--	--	--	--	--	--	--	--
PM_{10} 24-Hour PSD (Scenario 1)	**1.09**	--	--	--	--	--	--	--	--	--
PM_{10} 24-Hour PSD (Scenario 2)	**1.15**	--	--	--	--	--	--	--	--	--
PM_{10} 24-Hour PSD (Scenario 3)	**1.43**	--	--	--	--	--	--	--	--	--
PM_{10} Annual PSD (Scenario 0)	**0.15**	--	--	--	--	--	--	--	--	--
PM_{10} Annual PSD (Scenario 1)	**0.18**	--	--	--	--	--	--	--	--	--
PM_{10} Annual PSD (Scenario 2)	**0.18**	--	--	--	--	--	--	--	--	--
PM_{10} Annual PSD (Scenario 3)	**0.22**	--	--	--	--	--	--	--	--	--
$PM_{2.5}$ 24-Hour NAAQS (Scenario 0)	**0.87**	--	--	--	--	--	--	--	--	--
$PM_{2.5}$ 24-Hour NAAQS (Scenario 1)	**1.09**	--	--	--	--	--	--	--	--	--
$PM_{2.5}$ 24-Hour NAAQS (Scenario 2)	**1.15**	--	--	--	--	--	--	--	--	--
$PM_{2.5}$ 24-Hour NAAQS (Scenario 3)	**0.96**	**1.72**	**0.19**	**11.77**	**13.68**	**35**	**39.09**	**277,500**	**4,077,500**	**6,364**
$PM_{2.5}$ Annual NAAQS (Scenario 0)	**0.15**	--	--	--	--	--	--	--	--	--
$PM_{2.5}$ Annual NAAQS (Scenario 1)	**0.18**	--	--	--	--	--	--	--	--	--
$PM_{2.5}$ Annual NAAQS (Scenario 2)	**0.18**	--	--	--	--	--	--	--	--	--
$PM_{2.5}$ Annual NAAQS (Scenario 3)	**0.22**	**0.64**	**0.01**	**4.19**	**4.84**	**12**	**40.34**	**277,500**	**4,077,500**	**6,364**
$PM_{2.5}$ 24-Hour PSD (Scenario 0)	**0.87**	--	--	--	--	--	--	--	--	--
$PM_{2.5}$ 24-Hour PSD (Scenario 1)	**1.09**	--	--	--	--	--	--	--	--	--
$PM_{2.5}$ 24-Hour PSD (Scenario 2)	**1.15**	--	--	--	--	--	--	--	--	--
$PM_{2.5}$ 24-Hour PSD (Scenario 3)	**0.57**	**0.57**	**0.19**	--	**0.76**	**9**	**8.40**	**277,550**	**4,077,500**	**6,358**
$PM_{2.5}$ Annual PSD (Scenario 0)	**0.15**	--	--	--	--	--	--	--	--	--
$PM_{2.5}$ Annual PSD (Scenario 1)	**0.18**	--	--	--	--	--	--	--	--	--
$PM_{2.5}$ Annual PSD (Scenario 2)	**0.18**	--	--	--	--	--	--	--	--	--
$PM_{2.5}$ Annual PSD (Scenario 3)	**0.10**	**0.10**	**0.01**	--	**0.11**	**4**	**2.68**	**277,400**	**4,077,500**	**6,415**

Significant Impact Modeling

All significant impact modeling was evaluated using first-high impacts. There were no significant CO, SO_2, or PM_{10} impacts. $PM_{2.5}$ significant impacts were limited to scenario 3. When the modeled facility high impact was insignificant, only the high impact was entered in the table above.

NAAQS & NMAAQS Modeling

Cumulative NO_2 1-hour average modeling was evaluated using eighth-high impacts (98^{th}-percentile of the annual distribution of daily maximum 1-hour concentrations).

Cumulative $PM_{2.5}$ 24-hour average modeling was evaluated using eighth-high impacts.

PSD Modeling

Cumulative $PM_{2.5}$ 24-hour average modeling was evaluated using second-high impacts.

16-X: Summary/Conclusions

1	A statement that modeling requirements have been satisfied and that the permit can be issued.
	The modeling requirements have been satisfied and a permit can be issued.

Section 17

Compliance Test History

(Submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

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

Compliance Test History Table

Unit No.	Test Description	Test Date
1	Compliance test for NO_X and CO, in accordance with Operating Permit P023-R3, Condition A205.A	May 21, 2019
2	Compliance test for NO_X and CO, in accordance with Operating Permit P023-R3, Condition A205.A	May 21, 2019
3	Compliance test for NO_X and CO, in accordance with Operating Permit P023-R3, Condition A205.A	May 21, 2019
6	Compliance test for NO_X and CO, in accordance with Operating Permit P023-R3, Condition A205.A	May 20, 2019
7	Compliance test for NO_X and CO, in accordance with Operating Permit P023-R3, Conditions A205.A	May 20, 2019

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.

Not applicable.

Section 21

Addendum for Landfill Applications

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

Landfill Applications are not required to complete Sections 1-C Input Capacity and Production Rate, 1-E Operating Schedule, 17 Compliance Test History, and 18 Streamline Applications. Section 12 – PSD Applicability is required only for Landfills with Gas Collection and Control Systems and/or landfills with other non-fugitive stationary sources of air emissions such as engines, turbines, boilers, heaters. All other Sections of the Universal Application Form are required.

EPA Background Information for MSW Landfill Air Quality Regulations:
https://www3.epa.gov/airtoxics/landfill/landflpg.html

NM Solid Waste Bureau Website: https://www.env.nm.gov/swb/

Not applicable.

Section 22: Certification

Company Name: Harvest Four Corners, LLC

I, Kijun Hong, 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 30th day of April, 2020, upon my oath or affirmation, before a notary of the State of New Mexico.

*Signature

4/30/2020
Date

Kijun Hong
Printed Name

Environmental Specialist
Title

Scribed and sworn before me on this 30th day of April, 2020.

My authorization as a notary of the State of New Mexico expires on the 4th day of April, 2022.

Notary's Signature

4/30/20
Date

Rebecca L. Beard
Notary's Printed Name

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