

August 26, 2020

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

Re: Application to Modify NSR Construction Permit 2031-M3
Harvest Four Corners, LLC – North Crandell Compressor Station, A.I. No. 1374

Dear Mr. Schooley,

The **Harvest Four Corners, LLC (Harvest) North Crandell Compressor Station** is authorized under **Construction Permit 2031-M3**, issued January 24, 2011 (as administratively revised). The facility is a production gathering field compressor station that pressurizes natural gas for transport through natural gas pipelines.

Harvest is proposing the following permit modifications:

- Remove the unit 1 Cooper Superior 8GTLE natural gas-fired reciprocating compressor engine from the permit;
- Increase the allowable condensate throughput from 2,859 barrels per year (bpy) to 3,000 bpy;
- Reduce the allowable VOC emissions from the condensate storage tank (unit T1) from 46.7 tpy to 1.8 tpy VOC; and
- Reduce the allowable VOC emissions from SSM activities from 30.5 tpy to 25.7 tpy VOC.

This permit revision application is submitted under section 20.2.72.219.D(1)(a) of the New Mexico Administrative Code (NMAC) for a significant permit revision.

Construction permit 2031-M3 requires emission controls on RICE units 4 and 5, achieving a Potential To Emit (PTE) for carbon monoxide (CO) of less than 100 tpy. Together with the other proposed emission reductions (including for VOC) that do not require add-on emission controls, the facility-wide PTE for any regulated air pollutant will be reduced to below 100 tpy, making the facility a Title V Synthetic Minor Source of CO, and True Minor source of any other regulated air pollutant. Thus, the facility will no longer be subject to 20.2.70 NMAC, the Title V *Operating Permits* program. Upon issuance of the NSR permit revision, Harvest will request voluntary cancellation of the Title V Operating Permit (P197-R3).

In accordance with the instructions in the NMAQB Universal Air Quality Permit Application, one application hard copy original and one application hard copy review copy are provided, each with an enclosed CD containing the application electronic files.

If any additional information is needed with regard to this application, please contact Ms. Monica Smith of Harvest at (505) 632-4625.

Sincerely,

Lisa Killion
Sr. Environmental Scientist

Enclosures – One (1) hard copy application original with electronic files on CD
One (1) hard copy application review copy with electronic files on CD
Application filing fee in the amount of \$500.00 (Check No. 2473)

cc: Monica Smith, Harvest (electronic copy)
Bobby Myers, Cirrus (electronic copy)

**NEW MEXICO 20.2.72.219.D(1) NMAC APPLICATION
TO REVISE NSR CONSTRUCTION PERMIT 2031-M3**

NORTH CRANDELL 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**

August 2020

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Attachment:	Ambient Air Quality Dispersion Modeling Report

<p>Mail Application To:</p> <p>New Mexico Environment Department Air Quality Bureau Permits Section 525 Camino de los Marquez, Suite 1 Santa Fe, New Mexico, 87505</p> <p>Phone: (505) 476-4300 Fax: (505) 476-4375 www.env.nm.gov/aqb</p>		<p>For Department use only:</p> <p>AIRS No.:</p>
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Universal Air Quality Permit Application

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

Use this application for: the initial application, modifications, technical revisions, and renewals. For technical revisions, complete Sections, 1-A, 1-B, 2-E, 3, 9 and any other sections that are relevant to the requested action; coordination with the Air Quality Bureau permit staff prior to submittal is encouraged to clarify submittal requirements and to determine if more or less than these sections of the application are needed. Use this application for streamline permits as well. [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.: **2473** 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)(a) NMAC** (e.g. application for a new minor source would be 20.2.72.200.A NMAC, one example for a Technical Permit Revision is 20.2.72.219.B.1.b NMAC, a Title V acid rain application would be: 20.2.70.200.C NMAC)

Section 1 – Facility Information

Section 1-A: Company Information

		AI # if known (see 1 st 3 to 5 #s of permit IDEA ID No.): 1374	Updating Permit/NOI #: 2031-R3-R5
1	Facility Name: North Crandell 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 Aztec, drive north on County Road 550. Turn right (east) on County Road 2950 and drive 1.0 miles. At the "Y", turn left (north) and drive 0.2 miles to the facility.		
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	<input type="checkbox"/> Preparer: <input checked="" type="checkbox"/> Consultant:	Lisa Killion, Cirrus Consulting, LLC	Phone/Fax: 505-466-1790 / 505-466-4599
a	Mailing Address:	N/A	E-mail: killion@cirrusllc.com
6	Plant Operator Contact:	Monica Smith	Phone/Fax: 505-632-4625 / 505-632-4782
a	Address:	1755 Arroyo Drive, Bloomfield NM 87413	E-mail: msmith@harvestmidstream.com
7	Air Permit Contact:	Monica Smith	Title: Environmental Specialist
a	E-mail:	msmith@harvestmidstream.com	Phone/Fax: 505-632-4625 / 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? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	1.b If yes to question 1.a, is it currently operating in New Mexico? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
3	Is the facility currently shut down? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
6	Does this facility have a Title V operating permit (20.2.70 NMAC)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes, the permit No. is: P-197-R3-M1
7	Has this facility been issued a No Permit Required (NPR)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes, the NPR No. is:
8	Has this facility been issued a Notice of Intent (NOI)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes, the NOI No. is:
9	Does this facility have a construction permit (20.2.72/20.2.74 NMAC)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes, the permit No. is: 2031-M3-R5
10	Is this facility registered under a General permit (GCP-1, GCP-2, etc.)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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: 1.978 mmcfh ^(a)	Daily: 47.464 mmcf ^(a)	Annually: 17,324.342 mmcfy ^(a)
b	Proposed	Hourly: 1.978 mmcfh ^(a)	Daily: 47.464 mmcf ^(a)	Annually: 17,324.342 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: 1.978 mmcfh ^(a)	Daily: 47.464 mmcf ^(a)	Annually: 17,324.342 mmcfy ^(a)

b	Proposed	Hourly: 1.978 mmcfh ^(a)	Daily: 47.464 mmcf ^(a)	Annually: 17,324.342 mmcfy ^(a)
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^(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: 2	Range: 11W	Township: 30N	County: San Juan	Elevation (ft): 5,970
2	UTM Zone: <input type="checkbox"/> 12 or <input checked="" type="checkbox"/> 13			Datum: <input type="checkbox"/> NAD 27 <input type="checkbox"/> NAD 83 <input checked="" type="checkbox"/> WGS 84	
a	UTM E (in meters, to nearest 10 meters): 236,264 m			UTM N (in meters, to nearest 10 meters): 4,081,393 m	
b	AND Latitude (deg., min., sec.): 36° 50' 30.04"			Longitude (deg., min., sec.): -107° 57' 27.46"	
3	Name and zip code of nearest New Mexico town: Aztec, NM 87410				
4	Detailed Driving Instructions from nearest NM town (attach a road map if necessary): See Section 1-A.1.a.				
5	The facility is ~2 (distance) miles northeast (direction) of Aztec, NM (nearest town).				
6	Status of land at facility (check one): <input type="checkbox"/> Private <input type="checkbox"/> Indian/Pueblo <input type="checkbox"/> Federal BLM <input type="checkbox"/> Federal Forest Service <input checked="" type="checkbox"/> Other (specify) State of New Mexico				
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: Aztec, Bloomfield, Farmington; none; 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)? <input type="checkbox"/> Yes <input type="checkbox"/> 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: Mesa Verde National Park				
10	Shortest distance (in km) from facility boundary to the boundary of the nearest Class I area (to the nearest 10 meters): 53.613 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: ~650 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? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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? <input checked="" type="checkbox"/> No <input type="checkbox"/> 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 ^{~A M} ^{~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? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
4	Will this facility be a source of federal Hazardous Air Pollutants (HAP)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
a	If Yes, what type of source? <input type="checkbox"/> Major (<input type="checkbox"/> ≥ 10 tpy of any single HAP OR <input type="checkbox"/> ≥ 25 tpy of any combination of HAPS) OR <input checked="" type="checkbox"/> Minor (<input checked="" type="checkbox"/> < 10 tpy of any single HAP AND <input checked="" type="checkbox"/> < 25 tpy of any combination of HAPS)		
5	Is any unit exempt under 20.2.72.202.B.3 NMAC? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
a	If yes, include the name of company providing commercial electric power to the facility: <u>N/A</u> 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	<input type="checkbox"/> I have filled out Section 18, "Addendum for Streamline Applications." <input checked="" type="checkbox"/> N/A (This is not a Streamline application.)
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Section 1-H: Current Title V Information - Required for all applications from TV Sources

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

1	Responsible Official (R.O.) (20.2.70.300.D.2 NMAC): 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 (17.7 km), Jicarilla Apache Tribe (74.0 km), Navajo Reservation (22.5 km), Southern Ute Reservation (17.7 km), Ute Mountain Reservation (29.0 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-toe 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	Controlled by Unit #	Source Classification Code (SCC)	For Each Piece of Equipment, Check One	RICE Ignition Type (CI, SI, 4SLB, 4SRB, 2SLB) ⁴	Replacing Unit No.
							Date of Construction/ Reconstruction ²	Emissions vented to Stack #				
1	Compressor Engine	Cooper	Superior 8GTLE	282289 (Package # X00131)	1,100 hp	1,035 hp	12/03/1980	N/A	20200202	Existing (unchanged) <input checked="" type="checkbox"/> To be Removed New/Additional <input type="checkbox"/> Replacement Unit To Be Modified <input type="checkbox"/> To be Replaced	4SLB	N/A
							12/03/1980	1				
2	Compressor Engine	Waukesha	L7042GL	C-11100/8 (Package # X00427)	1,478 hp	1,391 hp	03/11/1994	N/A	20200202	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed New/Additional <input type="checkbox"/> Replacement Unit To Be Modified <input type="checkbox"/> To be Replaced	4SLB	N/A
							03/11/1994	2				
4	Compressor Engine	Waukesha	L7042GL	C-12608/4 (Package # 11881)	1,478 hp	1,391 hp	05/14/1998	4	20200202	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed New/Additional <input type="checkbox"/> Replacement Unit To Be Modified <input type="checkbox"/> To be Replaced	4SLB	N/A
							05/14/1998	4				
5	Compressor Engine	Waukesha	L7042GL	TBD	1,478 hp	1,391 hp	TBD	5	20200202	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed New/Additional <input type="checkbox"/> Replacement Unit To Be Modified <input type="checkbox"/> To be Replaced	4SLB	N/A
							TBD	5				
SSM ⁵	Compressor & Associated Piping	N/A	N/A	N/A	N/A	N/A	N/A	N/A	31000203	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed New/Additional <input type="checkbox"/> Replacement Unit <input checked="" type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							N/A	N/A				
F1	Equipment Leaks	NA	NA	NA	NA	NA	N/A	N/A	31000299	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed New/Additional <input type="checkbox"/> Replacement Unit <input checked="" type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							N/A	N/A				
M1	Malfunctions	N/A	N/A	N/A	N/A	N/A	N/A	N/A	31000299	<input checked="" type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed New/Additional <input type="checkbox"/> Replacement Unit To Be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							N/A	N/A				
T1 ⁶	Condensate Storage Tank	Pesco	N/A	T-3040	300 bbl	300 bbl	1999	N/A	31000299	<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed New/Additional <input type="checkbox"/> Replacement Unit <input checked="" type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced	N/A	N/A
							1999	N/A				
										<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced		
										<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced		
										<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced		
										<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced		
										<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced		
										<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced		
										<input type="checkbox"/> Existing (unchanged) <input type="checkbox"/> To be Removed <input type="checkbox"/> New/Additional <input type="checkbox"/> Replacement Unit <input type="checkbox"/> To Be Modified <input type="checkbox"/> To be Replaced		

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

² Specify dates required to determine regulatory applicability.

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

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

⁵ For simplicity, "SSM for 1a, 2a, 4a, 5a" (Compressor and associated piping) is simplified to "SSM". With this permit application, the SSM emissions include emissions from 2a, 4a, & 5a (SSM).

⁶ Inlet separator emissions are aggregated with the condensate storage tank (unit T1) emissions within this permit application. The separator pressure is regulated under existing permit 2031-M3, condition A203 Tanks, A. Tank Throughput and Separator Pressure (Unit T-1).

Table 2-B: Insignificant Activities¹ (20.2.70 NMAC) OR Exempted Equipment (20.2.72 NMAC)

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

Unit Number	Source Description	Manufacturer	Model No.	Max Capacity	List Specific 20.2.72.202 NMAC Exemption (e.g. 20.2.72.202.B.5)	Date of Manufacture /Reconstruction ²	For Each Piece of Equipment, Check One
			Serial No.	Capacity Units	Insignificant Activity citation (e.g. IA List Item #1.a)	Date of Installation /Construction ²	
L1	Truck Loading (Condensate)	NA	NA	NA	20.2.72.202.B(5) NMAC		<input checked="" type="checkbox"/> Existing (unchanged) ~ To be Removed <input type="checkbox"/> New/Additional ~ Replacement Unit <input type="checkbox"/> To Be Modified ~ To be Replaced
			NA	NA	Insignificant Activity List Item 1		
T2	Produced Water Storage Tank	Pesco		3990	20.2.72.202.B(5) NMAC	1997	<input type="checkbox"/> Existing (unchanged) ~ To be Removed <input type="checkbox"/> New/Additional ~ Replacement Unit <input checked="" type="checkbox"/> To Be Modified ~ To be Replaced
			T-1676	gal	Insignificant Activity List Item 1		
T3	Waste Water Storage Tank			2,100	20.2.72.202.B(2) NMAC		<input checked="" type="checkbox"/> Existing (unchanged) ~ To be Removed <input type="checkbox"/> New/Additional ~ Replacement Unit <input type="checkbox"/> To Be Modified ~ To be Replaced
			WIL06002	gal	Insignificant Activity List Item 5		
T4	Ambitrol Storage Tank			500	20.2.72.202.B(2) NMAC		<input checked="" type="checkbox"/> Existing (unchanged) ~ To be Removed <input type="checkbox"/> New/Additional ~ Replacement Unit <input type="checkbox"/> To Be Modified ~ To be Replaced
				gal	Insignificant Activity List Item 5		
T5	Used Oil Storage Tank			500	20.2.72.202.B(2) NMAC		<input checked="" type="checkbox"/> Existing (unchanged) ~ To be Removed <input type="checkbox"/> New/Additional ~ Replacement Unit <input type="checkbox"/> To Be Modified ~ To be Replaced
				gal	Insignificant Activity List Item 5		
T7	Out-of-Service			4200	Out-of-Service		<input checked="" type="checkbox"/> Existing (unchanged) ~ To be Removed <input type="checkbox"/> New/Additional ~ Replacement Unit <input type="checkbox"/> To Be Modified ~ To be Replaced
				gal	Out-of-Service		
T8 - T9	Out-of-Service			1890	Out-of-Service		<input checked="" type="checkbox"/> Existing (unchanged) ~ To be Removed <input type="checkbox"/> New/Additional ~ Replacement Unit <input type="checkbox"/> To Be Modified ~ To be Replaced
				gal	Out-of-Service		
T12 - T13	Methanol Storage Tanks			500	20.2.72.202.B(5) NMAC		<input checked="" type="checkbox"/> Existing (unchanged) ~ To be Removed <input type="checkbox"/> New/Additional ~ Replacement Unit <input type="checkbox"/> To Be Modified ~ To be Replaced
				gal	Insignificant Activity List Item 1		
T14	Produced Water Storage Tank	Permian Tank & Manufacturing Co.		1890	20.2.72.202.B(5) NMAC	06/01/95	<input type="checkbox"/> Existing (unchanged) ~ To be Removed <input type="checkbox"/> New/Additional ~ Replacement Unit <input checked="" type="checkbox"/> To Be Modified ~ To be Replaced
			25983	gal	Insignificant Activity List Item 1		
T15	Lubrication Oil Storage Tank			1050	20.2.72.202.B(2) NMAC		<input checked="" type="checkbox"/> Existing (unchanged) ~ To be Removed <input type="checkbox"/> New/Additional ~ Replacement Unit <input type="checkbox"/> To Be Modified ~ To be Replaced
				gal	Insignificant Activity List Item 5		
T16 - T18	Lubrication Oil Storage Tanks			500	20.2.72.202.B(2) NMAC		<input checked="" type="checkbox"/> Existing (unchanged) ~ To be Removed <input type="checkbox"/> New/Additional ~ Replacement Unit <input type="checkbox"/> To Be Modified ~ To be Replaced
				gal	Insignificant Activity List Item 5		
T19	TEG Storage Tank			500	20.2.72.202.B(2) NMAC		<input checked="" type="checkbox"/> Existing (unchanged) ~ To be Removed <input type="checkbox"/> New/Additional ~ Replacement Unit <input type="checkbox"/> To Be Modified ~ To be Replaced
				gal	Insignificant Activity List Item 5		
T20 & T21	Cleaner (Angry Orange) Storage Tanks			50	20.2.72.202.B(5) NMAC		<input checked="" type="checkbox"/> Existing (unchanged) ~ To be Removed <input type="checkbox"/> New/Additional ~ Replacement Unit <input type="checkbox"/> To Be Modified ~ To be Replaced
				gal	Insignificant Activity List Item 1		
							<input type="checkbox"/> Existing (unchanged) ~ To be Removed <input type="checkbox"/> New/Additional ~ Replacement Unit <input type="checkbox"/> To Be Modified ~ To be Replaced
							<input type="checkbox"/> Existing (unchanged) ~ To be Removed <input type="checkbox"/> New/Additional ~ Replacement Unit <input type="checkbox"/> 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
4	Oxidation catalytic converter	03/29/11	CO, VOC & CH ₂ O	4	93%, 50% & 76%	Manufacturer's Data
5	Oxidation catalytic converter	03/17/11	CO, VOC & CH ₂ O	5	93%, 50% & 76%	Manufacturer's Data

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

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

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

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

Unit No.	NOx		CO		VOC		SOx		PM ¹		PM10 ¹		PM2.5 ¹		H ₂ S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
2	4.60	20.14	9.20	40.29	2.15	9.40	6.01E-03	2.63E-02	0.10	0.45	0.10	0.45	0.10	0.45	-	-	-	-
4	4.60	20.14	9.20	40.29	2.15	9.40	6.01E-03	2.63E-02	0.10	0.45	0.10	0.45	0.10	0.45	-	-	-	-
5	4.60	20.14	9.20	40.29	2.15	9.40	6.01E-03	2.63E-02	0.10	0.45	0.10	0.45	0.10	0.45	-	-	-	-
SSM	-	-	-	-	-	25.70	-	-	-	-	-	-	-	-	-	-	-	-
T1 ²	-	-	-	-	unspecified	1.8	-	-	-	-	-	-	-	-	-	-	-	-
F1	-	-	-	-	0.82	3.6	-	-	-	-	-	-	-	-	-	-	-	-
M1	-	-	-	-	unspecified	10.0	-	-	-	-	-	-	-	-	-	-	-	-
Totals	13.80	60.43	27.59	120.86	7.26	69.27	0.02	0.08	0.31	1.34	0.31	1.34	0.31	1.34	-	-	0	0

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).

² The unit T1 condensate storage tank includes flashed emissions from the separator as well as storage tank working/breathing losses/flash emissions.

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 ₂ S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
2	4.60	20.14	9.20	40.29	2.15	9.40	6.01E-03	2.63E-02	0.10	0.45	0.10	0.45	0.10	0.45	-	-	-	-
4	4.60	20.14	0.64	2.82	1.07	4.70	6.01E-03	2.63E-02	0.10	0.45	0.10	0.45	0.10	0.45	-	-	-	-
5	4.60	20.14	0.64	2.82	1.07	4.70	6.01E-03	2.63E-02	0.10	0.45	0.10	0.45	0.10	0.45	-	-	-	-
SSM	-	-	-	-	-	25.70	-	-	-	-	-	-	-	-	-	-	-	-
T1 ²	-	-	-	-	unspecified	1.79	-	-	-	-	-	-	-	-	-	-	-	-
F1	-	-	-	-	0.82	3.58	-	-	-	-	-	-	-	-	-	-	-	-
M1	-	-	-	-	unspecified	10.0	-	-	-	-	-	-	-	-	-	-	-	-
Totals	13.80	60.43	10.49	45.93	5.11	59.87	0.02	0.08	0.31	1.34	0.31	1.34	0.31	1.34	-	-	0.00	0.00

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

² The unit T1 condensate storage tank includes flashed emissions from the separator as well as storage tank working/breathing losses/flash 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 scheduled maintenance are no higher than those listed in Table 2-E and a malfunction emission limit is not already permitted or requested. If you are required to report GHG emissions as described in Section 6a, include any GHG emissions during Startup, Shutdown, and/or Scheduled Maintenance (SSM) in Table 2-P. Provide an explanation of SSM emissions in Section 6 and 6a.

All applications for facilities that have emissions during routine or predictable startup, shutdown or scheduled maintenance (SSM¹), including NOI applications, must include in this table the Maximum Emissions during routine or predictable startup, shutdown and scheduled maintenance (20.2.7 NMAC, 20.2.72.203.A.3 NMAC, 20.2.73.200.D.2 NMAC). In Section 6 and 6a, provide emissions calculations for all SSM emissions reported in this table. Refer to "Guidance for Submittal of Startup, Shutdown, Maintenance Emissions in Permit Applications (https://www.env.nm.gov/aqb/permit/aqb_pol.html) for more detailed instructions. Numbers shall be expressed to at least 2 decimal points (e.g. 0.41, 1.41, or 1.41E-4).

Unit No.	NOx		CO		VOC		SOx		PM ²		PM10 ²		PM2.5 ²		H ₂ S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
SSM	-	-	-	-	unspecified	25.70	-	-	-	-	-	-	-	-	-	-	-	-
M1 ³	-	-	-	-	unspecified	10.00	-	-	-	-	-	-	-	-	-	-	-	-
Totals	-	-	-	-	not specified	35.70	-	-	-	-	-	-	-	-	-	-	-	-

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 from Construction 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 ₂ S 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)			
2	2	V	No	22	703	129			157	1.02
4	4	V	No	22	703	129			157	1.02
5	5	V	No	22	703	129			157	1.02

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		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		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
2	2	0.5	2.4	0.5	2.3	-	-												
4	4	0.2	0.7	0.1	0.5	-	-												
5	5	0.2	0.7	0.1	0.5	-	-												
SSM	SSM	unspecified	1.1	-	-	unspecified	0.7												
T1	T1	-	0.2	-	-	-	0.1												
F1	F1	-	0.2	-	-	-	0.1												
M1	M1	unspecified	0.4	-	-	unspecified	0.3												
Totals		0.9	5.6	0.8	3.3	-	1.2												

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
2	Natural Gas	Raw/Field Natural Gas	900 Btu/scf	11.4 Mscf	99.5 MMscf	--	--
4	Natural Gas	Raw/Field Natural Gas	900 Btu/scf	11.4 Mscf	99.5 MMscf	--	--
5	Natural Gas	Raw/Field Natural Gas	900 Btu/scf	11.4 Mscf	99.5 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	5.9	68.82	67.36	2.65	80.79	3.47
T2	40400315	Produced Water	Water; <1% hydrocarbon liquids	8.3	N/A*	N/A*	N/A*	N/A*	N/A*
T3	40400313	Waste Water	Water; <1% hydrocarbon liquids	Exempt source under 20.2.72.202.B(2) NMAC (Vapor pressure < 0.2 PSI)					
T4	40400314	Ambitrol	Ethylene Glycol	Exempt source under 20.2.72.202.B(2) NMAC (Vapor pressure < 0.2 PSI)					
T5	40400313	Used Oil	Used Oil	Exempt source under 20.2.72.202.B(2) NMAC (Vapor pressure < 0.2 PSI)					
T7	--	Out-of-Service	Out-of-Service	Not a source of regulated air pollutants					
T8, T9	--	Out-of-Service	Out-of-Service	Not a source of regulated air pollutants					
T12, T13	40700816	Methanol	Methanol	6.6	32.04	58.54	1.38	65.66	1.72
T14	40400315	Produced Water	Water; <1% hydrocarbon liquids	8.3	N/A*	N/A*	N/A*	N/A*	N/A*
T15	40400316	Lubrication Oil	Lubrication Oil	Exempt source under 20.2.72.202.B(2) NMAC (Vapor pressure < 0.2 PSI)					
T16, T18	40400314	Lubrication Oil	Lubrication Oil	Exempt source under 20.2.72.202.B(2) NMAC (Vapor pressure < 0.2 PSI)					
T19	31000299	Glycol	Glycol	Exempt source under 20.2.72.202.B(2) NMAC (Vapor pressure < 0.2 PSI)					
T20, T21	40400314	Cleaner (Angry Orange)	Surface cleaner	8.7	N/A*	N/A*	N/A*	N/A*	N/A*
					* 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	1999	Condensate		FX	300	47.7	3.66	2.48	MG	MG	Good	126,000	10.00
T2 ¹		Produced Water		FX	95	15.1	N/A*	N/A*	N/A*	N/A*	N/A*	27,482	6.9
T3		Waste Water		FX	50	7.9	Exempt source under 20.2.72.202.B(2) NMAC (Vapor pressure < 0.2 PSI)						
T4		Ambitrol		N/A	12	1.9	Exempt source under 20.2.72.202.B(2) NMAC (Vapor pressure < 0.2 PSI)						
T5		Used Oil		FX	12	1.9	Exempt source under 20.2.72.202.B(2) NMAC (Vapor pressure < 0.2 PSI)						
T7		Out-of-Service		FX	100	15.9	Not a source of regulated air pollutants						
T8, T9		Out-of-Service		FX	45	7.2	Not a source of regulated air pollutants						
T12, T13 (each)		Methanol		FX	11.9	1.9	1.37	1.01	WH	WH	Good	6,000	12
T14 ¹		Produced Water		FX	45	7.2	N/A*	N/A*	N/A*	N/A*	N/A*	13,018	6.9
T15		Lubrication Oil		FX	25	4.0	Exempt source under 20.2.72.202.B(2) NMAC (Vapor pressure < 0.2 PSI)						
T16, T18		Lubrication Oil		FX	12	1.9	Exempt source under 20.2.72.202.B(2) NMAC (Vapor pressure < 0.2 PSI)						
T19		Glycol		FX	12	1.9	Exempt source under 20.2.72.202.B(2) NMAC (Vapor pressure < 0.2 PSI)						
T20, T21 (each)		Cleaner (Angry Orange)		FX	1.2	0.19	N/A*	N/A*	N/A*	N/A*	N/A*	50	1.00
							* N/A: The emission calculations do not yield this data.						

¹ The individual unit T2 and T14 produced water tank throughputs (gal/yr) = Total facility throughput (gal/yr) x (Individual produced water tank volume/ (Sum of produced water tank volumes))

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
	Mechanical Shoe Seal	Liquid-mounted resilient seal	Vapor-mounted resilient seal	Seal Type		
FX: Fixed Roof					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 M³ = 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	40,500 gal/yr	Produced water	H2O + trace of HC	Liquid	40,500 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, as 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 ₂ O ton/yr	CH ₄ ton/yr	SF ₆ ton/yr	PFC/HFC ton/yr ²						Total GHG Mass Basis ton/yr ⁴	Total CO ₂ e ton/yr ⁵
Unit No.	GWPs¹	1	298	25	22,800	footnote 3							
2	mass GHG	6,010.5	0.0113	0.1133								6010.6	-
	CO ₂ e	6,010.5	3.4	2.8								-	6016.66
4	mass GHG	6,010.5	0.0113	0.1133								6010.6	-
	CO ₂ e	6,010.5	3.4	2.8								-	6016.7
5	mass GHG	6,010.5	0.0113	0.1133								6010.6	-
	CO ₂ e	6,010.5	3.4	2.8								-	6016.66
SSM	mass GHG	7.0	-	122.0								128.99	-
	CO ₂ e	7.0	-	3,050.9								-	3057.8
T1	mass GHG	3.46E-02	-	0.1912								0.23	-
	CO ₂ e	0.0	-	4.8								-	4.8
L1	mass GHG	0.0	-	0.00E+00								0.00	-
	CO ₂ e	0.0	-	0.0								-	0.0
F1	mass GHG	0.5	-	9.48								10.01	-
	CO ₂ e	0.5	-	236.88								-	237.4
M1	mass GHG	2.7	-	47.5								50.2	-
	CO ₂ e	2.7	-	1,187.4								-	1190.1
Insig Tanks & Truck Loading	mass GHG	0.0	-	0.0								0.0	-
	CO ₂ e	0.0	-	0.0								-	0.0
Reciprocating Compressors	mass GHG	9.5	-	167.5								177.0	-
	CO ₂ e	9.5	-	4,187.2								-	4196.7

Unit No.		CO ₂ ton/yr	N ₂ O ton/yr	CH ₄ ton/yr	SF ₆ ton/yr	PFC/HFC ton/yr ²						Total GHG Mass Basis ton/yr ⁴	Total CO ₂ e ton/yr ⁵
Unit No.	GWPs¹	1	298	25	22,800	footnote 3							
Pneumatic Devices	mass GHG	2.5	-	44.1								46.6	-
	CO ₂ e	2.5	-	1,102.7								-	1105.2
Pneumatic Pumps	mass GHG	0.1	-	2.1								2.2	-
	CO ₂ e	0.1	-	52.8								-	52.9
	mass GHG											0.0	-
	CO ₂ e											-	0.0
	mass GHG											0.0	-
	CO ₂ e											-	0.0
	mass GHG											0.0	-
	CO ₂ e											-	0.0
	mass GHG											0.0	-
	CO ₂ e											-	0.0
	mass GHG											0.0	-
	CO ₂ e											-	0.0
	mass GHG											0.0	-
	CO ₂ e											-	0.0
Total⁶	mass GHG	18,053.8	0.03	393.25								18,447.05	-
	CO ₂ e	18,053.8	10.13	9,831.1								-	27,895.04

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 val

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 CO₂e means Carbon Dioxide Equivalent and is calculated by multiplying the TPY mass emissions of the green house gas by its GWP.

Section 3

Application Summary

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

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

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

Harvest Four Corners, LLC (Harvest) is submitting this air quality permit application to the New Mexico Air Quality Bureau (NMAQB) for a revision to Construction Permit 2031-M3, issued January 24, 2011 (as administratively revised) for the North Crandell (N Crandell) Compressor Station (CS). This permit revision application is submitted under section 20.2.72.219.D(1)(a) of the New Mexico Administrative Code (NMAC) for a significant permit revision. The facility also operates under Title V Operating Permit P197-R3, issued June 24, 2016 (as revised).

The N Crandell facility is a production gathering field compressor station that pressurizes natural gas for transport through natural gas pipelines. The facility permit currently includes the following regulated equipment/sources:

- One Cooper Superior 8GTLE natural gas-fired reciprocating compressor engine (unit 1);
- One uncontrolled Waukesha L7042GL natural gas-fired reciprocating compressor engine (unit 2), and two Waukesha L7042GL engines equipped with emission control catalysts (units 4 & 5);
- Emissions of volatile organic compounds (VOC) associated with startup, shutdown and routine maintenance activities (SSM);
- Fugitive emissions of VOC (unit F1);
- Up to 10 tons per year (tpy) of facility-wide malfunction emissions of VOC (unit M1); and
- One 300 barrel (bbl) condensate storage tank (unit T1).

Unregulated/exempt emission sources at the facility include exempt storage tanks, and condensate and produced water truck loading activities (units L1 and L2, respectively). The regulatory justification for

their exemption is noted in Table 2-B of the application. Exemptions that are based on 20.2.72.202.B(5) NMAC (i.e., any emissions unit, operation, or activity that has a potential emission rate of no more than one-half (1/2) ton per year of any pollutant for which a national or New Mexico ambient air quality standard has been set or one-half (1/2) ton per year of any VOC) is demonstrated through emission calculations in section 6.

The facility is authorized to operate continuously.

With this application, Harvest requests the following changes to the construction permit:

- Remove the unit 1 Cooper Superior 8GTLE natural gas-fired reciprocating compressor engine from the permit;
- Increase the allowable condensate throughput from 2,859 barrels per year (bpy) to 3,000 bpy;
- Reduce the allowable VOC emissions from the condensate storage tank (unit T1) from 46.7 tpy to 1.8 tpy VOC; and
- Reduce the allowable VOC emissions from SSM activities from 30.5 tpy to 25.7 tpy VOC.

The facility is an area source of Hazardous Air Pollutants (HAP) under both 40 CFR 63, subpart HH, *National Emission Standards for Hazardous Air Pollutants [NESHAP] for Oil and Gas Production Facilities*, and subpart ZZZZ, *NESHAP for Stationary Reciprocating Internal Combustion Engines*.

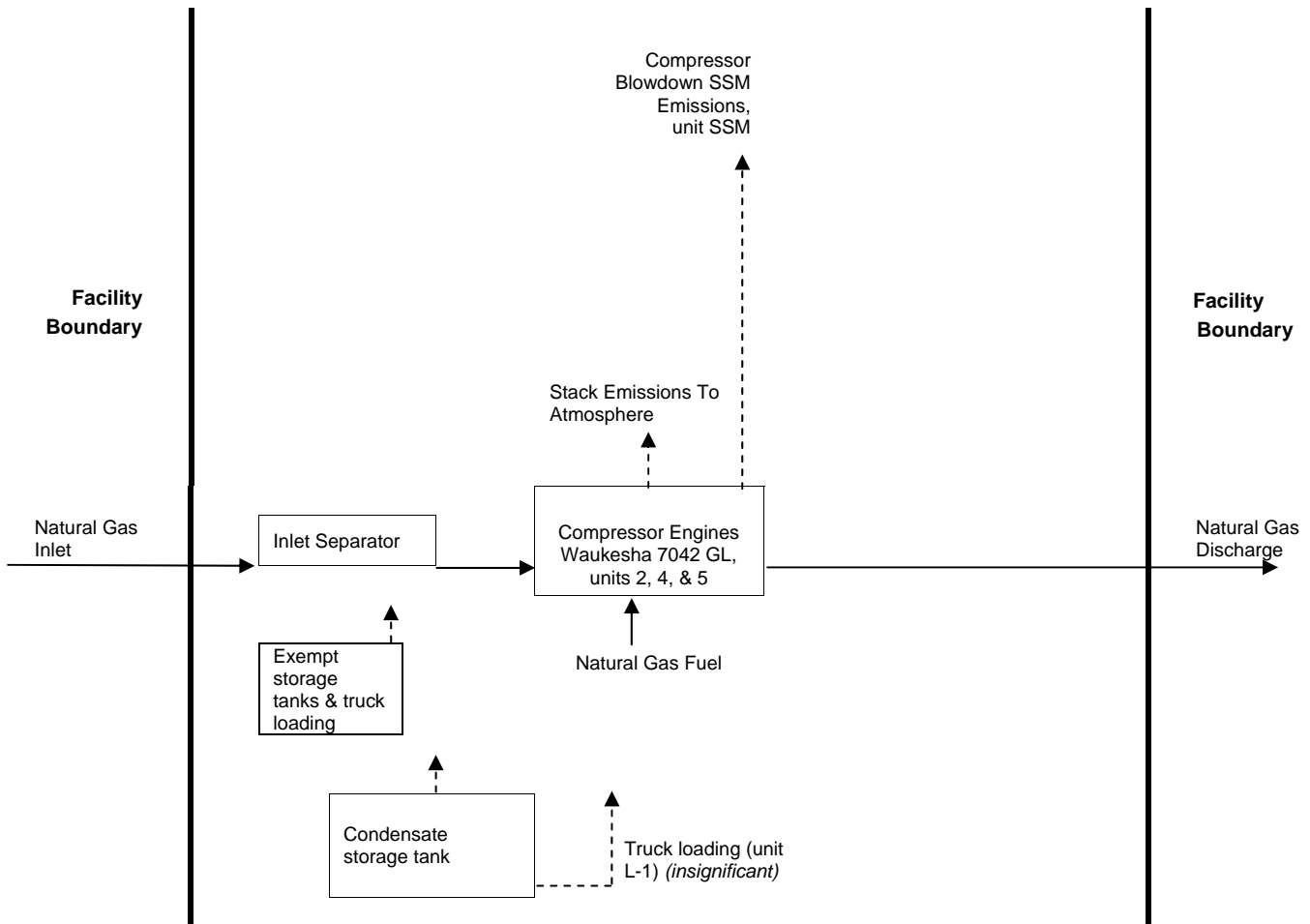
The current construction permit requires emission controls on RICE units 4 and 5 for the control of CO and VOC, achieving a Potential To Emit (PTE) for carbon monoxide (CO) of less than 100 tpy. Together with the other proposed emission reductions (including for VOC) that do not require add-on emission controls, the PTE for any regulated air pollutant will be reduced to below 100 tpy, making the facility a Title V Synthetic Minor Source of CO, and True Minor source of any other regulated air pollutant. Thus, the facility will no longer be subject to 20.2.70 NMAC, the Title V *Operating Permits* program. Upon issuance of this NSR revision, Harvest will request voluntary cancellation of the Title V Operating Permit (P197-R3).

None of the proposed permit revisions affect the station operations, de-bottleneck impacts, or change the station's continued true minor source status under the 20.2.74 NMAC *Permits – Prevention of Significant Deterioration (PSD)* program.

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.

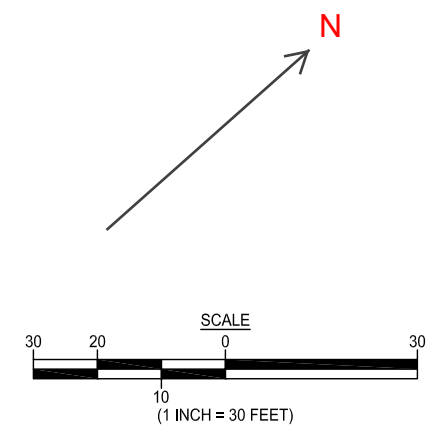
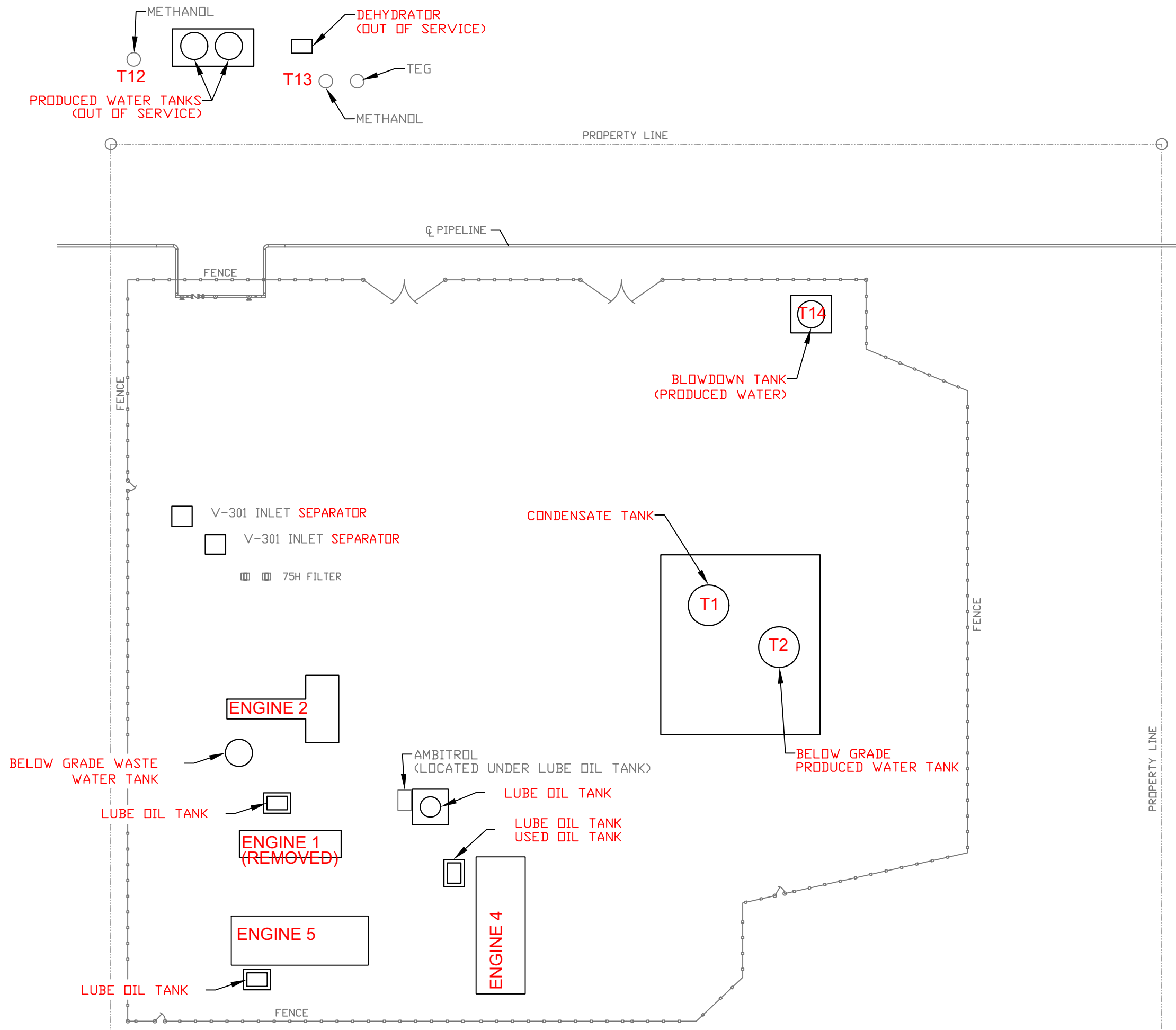
Please see the following page(s).

FACILITY LAYOUT
 WILLIAMS FOUR CORNERS LLC
 NORTH CRANDELL FACILITY
 SW¼, NE¼, SECTION 2, T30N, R11W
 SAN JUAN COUNTY, NEW MEXICO
 N36.84204, W107.95800



DRAWN BY: C. Lameman	DATE DRAWN: January 9, 2014
REVISIONS BY: C. Lameman	DATE REVISED: January 8, 2015
CHECKED BY: E. McNally	DATE CHECKED: January 8, 2015
APPROVED BY: E. McNally	DATE APPROVED: January 8, 2015

NOTE: SITE DIAGRAM OBTAINED FROM
HARVEST FOUR CORNERS
 and modified by
 Cirrus Consulting, LLC
 August 2020



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 rationale 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.

Reciprocating Engines

Emissions of nitrogen oxides (NO_x), carbon monoxide (CO) and volatile organic compound (VOC) emissions from the Waukesha 7042GL engines (units 2, 4, and 5) are calculated from engine manufacturer's data and the site-rated horsepower (hp) rating of the engine. The CO and VOC emissions from the engines equipped with oxidation catalytic converters (units 4 and 5) are based on application of the corresponding catalyst manufacturer's emission reduction factors (control efficiencies) of 93% and 50% reduction, respectively. The catalytic converters oxidize only the emissions of CO and VOC, as NO_x emissions are not controlled by catalytic converters on 4-stroke, lean burn engines. Sulfur dioxide (SO₂) and particulate emissions from the engines are calculated from AP-42, Table 3.2-2 emission factors and the maximum fuel use. Uncontrolled hazardous air pollutants (HAPs) from the RICE are calculated with the GRI-HAPCalc 3.1 emissions estimation software. The emission calculations assume operation at full site capacity for 8,760 hours per year. The catalyst manufacturer's emission reduction factor (control efficiency) of 76% reduction is applied to the uncontrolled formaldehyde emissions from units 4 and 5.

Each of the engines 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 and effective temperature of the catalytic converter, 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 fuel and air flow cease within seconds of shutdown. Emissions due to scheduled maintenance are negligible, as the engine is not in operation during maintenance.

The criteria pollutant emission calculations and GRI-HAPCalc 3.0 output file calculations are provided in this section.

Startup, Shutdown & Routine Maintenance (SSM) Emissions

Emissions associated with startups, shutdowns and routine maintenance (SSM) from the compressors and piping are vented to the atmosphere. SSM emissions from a compressor occur when high pressure gas is used to purge air from the compressor and associated piping prior to a startup. This gas is then vented to atmosphere. Also, after shutdowns, high pressure gas in the compressor(s) and associated piping is released to atmosphere as a safety precaution.

One common reason for compressor startups and shut downs 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.

The compressor is also shut down for maintenance of the engine, compressor or other equipment at the station. This maintenance is scheduled based on 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”.

The VOC and HAP emissions from blowdown of the compressors and piping associated with the facility 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 the extended gas analysis described above. 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 also designed to ensure an adequate emissions limit, which includes any 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.

SSM emission calculations are provided in this section.

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 an averaged extended gas sample calculated from two N Crandell gas inlets sampled on May 2, 2019. 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 of VOC from leaking valves, connectors, seals, etc. are accounted for in the emission calculations.

The emission calculations are provided in this section. Copies of the extended gas analyses and blended gas sample calculations are in section 7, ‘Information Used To Determine Emissions’.

Condensate Storage Tank

Flash emissions

The ProMax 3.2 emissions modeling program is used to calculate facility-wide emissions of flashed VOC and HAP associated with the inlet separator and the 300-barrel (bbl) (12,600-gallon (gal)) condensate storage tank (unit T1), permitted in aggregate as unit T1. The ProMax output provides a graphical representation of the facility-wide aggregated flash emissions of VOC in the “North Crandell Condensate Tank Flash Model” main flowsheet, including a representation of the individual material streams. Input to the model includes a representative condensate liquid analysis (North Crandell Station Inlet Scrubber Spot analysis, sampled May 11, 2020) along with operating parameters representative of the facility.

The total flashed gas lb/hr including mass flow (VOC and non-VOC) is provided in the ‘/Flash_Emissions (Material Stream)’ (0.22 lb/hr). The VOC mass flow (lb/hr) is calculated from the sum of the mass fraction of non-methane, non-ethane (NMNE) hydrocarbons in the vapor stream (Vap) multiplied by the sum by the total gas mass flow (lb/hr):

$$\text{Sum of the individual NMNE (VOC) hydrocarbon mass fractions} \times (\text{total gas lb/hr}) = \text{VOC lb/hr}$$

Tons per year of VOC is calculated from the VOC lb/hr:

$$\text{Tons per year VOC tpy} = \text{VOC lb/hr} \times 8760 \text{ hr/yr} \times 1 \text{ ton}/2000 \text{ lbs}$$

(Note the calculated VOC tpy above is equivalent in value to that shown in the ‘Flash_Emissions EmissionsDetail.VOCs’ of the ProMax “North Crandell Condensate Tank Flash Model” main flowsheet graphic.)

Similarly, the facility-wide flash gas HAP emissions are calculated from the individual speciated vapor mass flow fractions in the ‘/Flash_Emissions (Material Stream)’ and the total gas mass flow (lb/hr).

$$\text{Individual HAP hydrocarbon mass fraction} \times (\text{total gas lb/hr}) = \text{Individual HAP lb/hr}$$

$$\text{Sum of the individual HAP hydrocarbon mass fractions} \times (\text{total gas lb/hr}) = \text{Total HAP lb/hr}$$

$$\text{Tons per year HAP} = \text{HAP lb/hr} \times 8760 \text{ hr/yr} \times 1 \text{ ton}/2000 \text{ lbs}$$

Tank Working & Breathing Emissions

The unit T1 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 3,000 barrels per year (bpy) (126,000 gallons per year, gpy) of condensate. The condensate liquid composition (including HAP constituents) is estimated from 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 loss tpy emissions prior to their aggregation in unit T1 of the Table 2-E (Requested Allowable Emissions) in order to allow for fluctuations in the composition of the condensate. The calculated PTE (1.8 tpy VOC) is significantly lower than the currently permitted 46.7 tpy VOC for the unit T1 condensate tank. The emission reduction brings the overall facility-wide PTE for VOC to below 10.0 tpy. Together with the emission controls discussed for engine units 4 and 5, the overall facility PTE for any regulated pollutant are below the 100 tpy Title V Operating Permit requirement threshold, and the facility becomes a Title V Synthetic Minor Source and is no longer subject to the requirement to obtain a Title V Operating Permit. (The facility is Title V “Synthetic Minor” rather than “True Minor” due to uncontrolled emissions of CO from the units 4 and 5 engines.)

Due to the nature of operations, SSM startup and shutdown emissions from the condensate storage tank are assumed to be accounted for in the emission calculations discussed above.

The criteria and HAP emission calculations are provided in this section, including the ProMax flash emission calculations and the TANKS program output file.

Exempt Storage Tanks

Except for the condensate storage tank discussed above, all of the storage tanks at the N Crandell CS are exempt under either 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 tanks (units T2 and T14) 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 an aggregated PTE of less than 0.5 tpy for any regulated air pollutant, the unit T2 and T14 produced water storage tanks are exempt sources under 20.2.72.202.B(5) NMAC.
- Residual Oil #6 is used to approximate the stored contents of the lube oil storage tanks (units T15 through T18) and used oil tank (unit T5). The residual oil liquid has a vapor pressure of less than 0.2 PSI; therefore, the lube oil and used oil storage tanks are exempt under 20.2.72.202.B(2) NMAC.

- The wastewater storage tank (unit T3) is assumed to contain one percent (1%) Residual Oil #6 and 99 percent (99%) water. The residual oil liquid has a vapor pressure of less than 0.2 PSI; therefore, the wastewater storage tank is exempt under 20.2.72.202.B(2) NMAC.
- The vapor pressure of triethylene glycol (TEG) is less than 0.2 PSI; therefore, the TEG storage tank (unit T19) is exempt under 20.2.72.202.B(2) NMAC.
- Tank working/ breathing emissions of VOC for the 500-gallon methanol storage tanks (units T12 and T13) are calculated using the TANKS 4.09 d emission calculation program and the TANKS program speciation profile for methanol. The methanol emissions are well below 0.5 tpy in aggregate; therefore, the methanol storage tanks are exempt under 20.2.72.202.B(5) NMAC.
- Ambitol® is a mixture of ethylene glycol, water and < 5% dipotassium hydrogen phosphate. As the vapor pressure of ethylene glycol is less than 0.2 PSI; therefore, the unit T4 Ambitol® storage tank is exempt under 20.2.72.202.B(2) NMAC.
- The MSDS for the Angry Orange® cleaner does not indicate the vapor pressure of the liquid. The two 50-gallon storage tanks containing the cleaner (units T20 and T21) are too small to use the TANKS emission calculation software. Therefore, emissions are calculated using the physical characteristics of the cleaner including liquid density and the weight percentages of the regulated air quality pollutants as listed in the Angry Orange® MSDS, and the assumption that all of the liquid evaporates to atmosphere. The resulting emissions are well below 0.5 tpy in aggregate; therefore, the Angry Orange® cleaner tanks are exempt under 20.2.72.202.B(5) NMAC.

One of the listed constituents of the Angry Orange® cleaner (2-butoxyethanol) is a Toxic Air Pollutant (TAPs) identified under 20.2.72.502 NMAC, Table A, *Toxic Air Pollutants and Emissions*. The calculated hourly emission rate for 2-butoxyethanol is below the 20.2.72.502 NMAC Table A screening thresholds.

- Storage tanks T7, T8, and T9 are not in service, and therefore no emissions are associated with these units.

Due to the nature of operations, startup and shutdown emissions from the insignificant storage tanks are accounted-for in the steady-state emission calculations. Emissions due to maintenance are negligible as the unit(s) would not be in operation.

Condensate Truck Loading Emissions (Exempt)

VOC and HAP emissions from condensate truck loading activities (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 post-flashed condensate liquid from the TANKS 4.09d output. Based on a calculated PTE of less than 0.5 tpy VOC, the condensate truck loading is an exempt source under 20.2.72.202.B(5) NMAC.

The emission calculations are included in this section.

Produced Water Truck Loading (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 CDPH E/TCEQ produced water emission factors of HAP to VOC (lb/bbl HAP / lb/bbl VOC), and applied to the truck loading lb/hr and tpy VOC emission rates. Based on a calculated PTE of less than 0.5 tpy VOC, the produced water truck loading is an exempt source under 20.2.72.202.B(5) NMAC.

The emission calculations are included in this section.

Malfunctions

Malfunction (unit M1) emissions of VOC are set at 10 tpy. Based on the gas release rate associated with the set emission rate, HAP emissions are calculated from the natural gas extended analysis described above.

Engine Exhaust Emissions Calculations

Unit Number: **2, 4, & 5**
 Description: Waukesha L7042GL - **uncontrolled and controlled 4SLB RICE**

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

Horsepower Calculations

5,970 ft above MSL	Elevation	
1,478 hp	Nameplate hp	Mfg. data
1,391 hp	NMAQB Site-rated hp	NMAQB Procedure # 02.002-00 (loss of 3% for every 1,000 ft over 4,000 ft)
1,346 hp	Mfg. Site-rated hp	Mfg. product bulletin Power Derate, S8154-6, April 2001 (loss of 2% for every 1,000 ft over 1,500 ft)

Engine Specifications

1200 rpm	Engine rpm	Mfg. data
7040 cu in	Engine displacement	Mfg. data
130.37 psi	BMEP	Mfg. data $(+[(792,000 \times \text{NMAQB Site-rated hp}) / (\text{rpm} \times \text{in}^3)])$

Fuel Consumption

7349 Btu/hp-hr	Brake specific fuel consumption	Mfg. data
10.22 MMBtu/hr	Hourly fuel consumption	Btu/hp-hr x NMAQB site-rated hp / 1,000,000
11,355 scf/hr	Hourly fuel consumption	MMBtu/hr x 1,000,000 / Btu/scf
8,760 hr/yr	Annual operating time	Harvest
89,520 MMBtu/yr	Annual fuel consumption	MMBtu/hr x hr/yr
99.47 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	Unit 2		Control Efficiencies, %	Units 4 & 5	
		Uncontrolled Emission Rates, pph	tpy		Controlled Emission Rates, pph	tpy
NO _x	1.50	4.599	20.143	0	4.60	20.14
CO	3.00	9.198	40.286	93	6.44E-01	2.82
VOC	0.70	2.146	9.400	50	1.07	4.70

Emission factors taken from Waukesha Bulletin 7005 0102
 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
 Control efficiencies taken from **manufacturer's data (EMIT Technologies)**
 Controlled Emission Rates (pph) = Uncontrolled Emission Rates (pph) x (1 - (% / 100))
 Controlled Emission Rates (tpy) = Uncontrolled Emission Rates (tpy) x (1 - (% / 100))

Pollutants	Emission Factors, lb/MMBtu	Uncontrolled Emission Rates,	
		pph	tpy
SO ₂	5.88E-04	6.01E-03	2.63E-02
PM	9.99E-03	1.02E-01	4.47E-01
PM ₁₀	9.99E-03	1.02E-01	4.47E-01
PM _{2.5}	9.99E-03	1.02E-01	4.47E-01

Emission factors taken from AP-42, Table 3.2-2
 Particulate factors include both filterable and condensable emissions
 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

703 °F	Stack exit temperature	Mfg. data
7731 acfm	Stack flowrate	Mfg. data
1.02 ft	Stack exit diameter	Harvest
0.82 ft ²	Stack exit area	3.1416 x ((ft / 2) ^2)
157.43 fps	Stack exit velocity	acfm / ft ² / 60 sec/min
22.00 ft	Stack height	Harvest

GRI-HAPCalc® 3.01
Engines Report

Facility ID:	N CRANDELL	Notes:	Waukesha L7042GL
Operation Type:	COMPRESSOR STATION		
Facility Name:	NORTH CRANDELL COMPRESSOR		
User Name:	Cirrus Consulting		
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: EU 2, 4, 5
 Hours of Operation: 8,760 Yearly
 Rate Power: 1,391 hp
 Fuel Type: FIELD GAS
 Engine Type: 4-Stroke, Lean Burn
 Emission Factor Set: FIELD > EPA > LITERATURE
 Additional EF Set: -NONE-

Calculated Emissions (ton/yr)

<u>Chemical Name</u>	<u>Emissions</u>	<u>Emission Factor</u>	<u>Emission Factor Set</u>
<u>HAPs</u>			
Formaldehyde	2.2585	0.16830000 g/bhp-hr	GRI Literature
Benzene	0.0698	0.00520000 g/bhp-hr	GRI Literature
Toluene	0.0282	0.00210000 g/bhp-hr	GRI Literature
Xylenes(m,p,o)	0.0188	0.00140000 g/bhp-hr	GRI Literature
Total	2.3753		

Compressor Blowdown Emissions Calculations

Unit Number: **SSM**
 Description: Compressor & Piping Associated With Station

Throughput

3 # of units	Number of units	Harvest Four Corners
365 events/yr/unit	Blowdowns per year per unit	Harvest Four Corners
6,140 scf/event	Gas loss per blowdown	Harvest Four Corners
6,723,300 scf/yr	Annual gas loss	# of units x events/yr/unit x scf/event

Emission Rates

Pollutants	Emission Factors, lb/scf	Uncontrolled, Emission Rates, tpy
VOC	7.645E-03	25.70
2,2,4-Trimethylpentane	1.136E-05	3.82E-02
Benzene	2.770E-05	9.31E-02
Ethylbenzene	1.260E-06	4.23E-03
n-Hexane	2.115E-04	7.11E-01
Toluene	5.927E-05	1.99E-01
Xylene	1.917E-05	6.45E-02

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

Emission Factors

Components	Mole Percents, %	Molecular Weights, lb/lb-mole	Emission Factors, lb/scf
Carbon dioxide	1.7841	44.01	2.070E-03
Hydrogen sulfide	0.0000	34.07	0.000E+00
Nitrogen	0.1869	28.01	1.380E-04
Methane	85.8661	16.04	3.631E-02
Ethane	6.9495	30.07	5.509E-03
Propane	2.8103	44.09	3.267E-03
Isobutane	0.5375	58.12	8.235E-04
n-Butane	0.7775	58.12	1.191E-03
Isopentane	0.2910	72.15	5.534E-04
n-Pentane	0.2132	72.15	4.055E-04
Cyclopentane	0.0125	70.14	2.311E-05
n-Hexane	0.0931	86.17	2.115E-04
Cyclohexane	0.0340	84.16	7.533E-05
Other hexanes	0.2047	86.18	4.650E-04
Heptanes	0.0776	100.20	2.049E-04
Methylcyclohexane	0.0705	98.19	1.824E-04
2,2,4-Trimethylpentane	0.0043	100.21	1.136E-05
Benzene	0.0135	78.11	2.770E-05
Toluene	0.0244	92.14	5.927E-05
Ethylbenzene	0.0005	106.17	1.260E-06
Xylenes	0.0069	106.17	1.917E-05
C8+ Heavies	0.0427	110.00	1.237E-04
Total	100.0001		
Total VOC			7.645E-03

Gas stream composition obtained from the N Crandell inlet gas streams ('N Crandell' and 'Hampton') extended gas analyses sampled May 2, 2019.

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

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	378	0.0045	0.0099	3.74	16.39
Connectors	339	0.0002	0.0004	0.15	0.65
Pump Seals	0	0.0024	0.0053	0.00	0.00
Compressor Seals	36	0.0088	0.0194	0.70	3.05
Pressure Relief Valves	25	0.0088	0.0194	0.48	2.12
Open-Ended Lines	103	0.0020	0.0044	0.45	1.99
Total				5.53	24.20

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	1.7841	44.010	78.518			
Hydrogen sulfide	0.0000	34.070	0.000			
Nitrogen	0.1869	28.013	5.236			
Methane	85.8661	16.043	1377.549	70.265		
Ethane	6.9495	30.070	208.970	10.659		
Propane	2.8103	44.097	123.924	6.321	3.49E-01	1.53
Isobutane	0.5375	58.123	31.238	1.593	8.80E-02	3.86E-01
n-Butane	0.7775	58.123	45.191	2.305	1.27E-01	5.58E-01
Isopentane	0.2910	72.150	20.992	1.071	5.92E-02	2.59E-01
n-Pentane	0.2132	72.150	15.379	0.784	4.33E-02	1.90E-01
Cyclopentane	0.0125	70.134	0.877	0.045	2.47E-03	1.08E-02
n-Hexane	0.0931	86.177	8.023	0.409	2.26E-02	9.90E-02
Cyclohexane	0.0340	84.161	2.857	0.146	8.05E-03	3.53E-02
Other hexanes	0.2047	86.177	17.636	0.900	4.97E-02	2.18E-01
Heptanes	0.0776	100.204	7.771	0.396	2.19E-02	9.59E-02
Methylcyclohexane	0.0705	98.188	6.917	0.353	1.95E-02	8.54E-02
2,2,4-Trimethylpentane	0.0043	114.231	0.491	0.025	1.38E-03	6.06E-03
Benzene	0.0135	78.114	1.051	0.054	2.96E-03	1.30E-02
Toluene	0.0244	92.141	2.248	0.115	6.34E-03	2.78E-02
Ethylbenzene	0.0005	106.167	0.048	0.002	1.35E-04	5.90E-04
Xylenes	0.0069	106.167	0.727	0.037	2.05E-03	8.98E-03
C8+ Heavies	0.0427	114.231	4.872	0.249	1.37E-02	6.01E-02
Total	100.0001		1960.515			
Total VOC				14.804	8.18E-01	3.58

Gas stream composition obtained from the N Crandell inlet gas streams ('N Crandell' and 'Hampton') extended gas analyses sampled May 2, 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)

Equipment Leaks Emissions Calculations

Unit Number: **F1**

Description: Valves, Connectors, Seals & Lines

Number of Compression Units at the Facility: **3**

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	132	177	0	12	18	33	0	12	27
Components from dehydrators	0	0	0	0	0	0	0	0	0
Total	253	250	0	36	25	81	3	22	39
Adjusted Total	378	339	0	36	25	103			

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	1.486E-01	1.49E-02
Benzene	3.623E-01	3.62E-02
Ethylbenzene	1.648E-02	1.65E-03
n-Hexane	2.767E+00	2.77E-01
Toluene	7.753E-01	7.75E-02
Xylene	2.508E-01	2.51E-02

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	1.7841	44.01		
Hydrogen sulfide	0.0000	34.07		
Nitrogen	0.1869	28.01		
Methane	85.8661	16.04		
Ethane	6.9495	30.07		
Propane	2.8103	44.09	1.2390	4.273E+01
Isobutane	0.5375	58.12	0.3124	1.077E+01
n-Butane	0.7775	58.12	0.4519	1.558E+01
Isopentane	0.2910	72.15	0.2099	7.239E+00
n-Pentane	0.2132	72.15	0.1538	5.303E+00
Cyclopentane	0.0125	70.14	0.0088	3.024E-01
n-Hexane	0.0931	86.17	0.0802	2.767E+00
Cyclohexane	0.0340	84.16	0.0286	9.853E-01
Other hexanes	0.2047	86.18	0.1764	6.082E+00
Heptanes	0.0776	100.20	0.0777	2.680E+00
Methylcyclohexane	0.0705	98.19	0.0692	2.386E+00
2,2,4-Trimethylpentane	0.0043	100.21	0.0043	1.486E-01
Benzene	0.0135	78.11	0.0105	3.623E-01
Toluene	0.0244	92.14	0.0225	7.753E-01
Ethylbenzene	0.0005	106.17	0.0005	1.648E-02
Xylenes	0.0069	106.17	0.0073	2.508E-01
C8+ Heavies	0.0427	110.00	0.0469	1.618E+00
Total	100.0001			
Total VOC			2.8998	

Gas stream composition obtained from the N Crandell inlet gas streams ('N Crandell' and 'Hampton') extended gas analyses sampled May 2, 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)

Storage Tank Emissions Data and Calculations

Unit Number: Regulated storage tanks, and exempt tanks under 20.2.72.202.B(5) NMAC (exemption source demonstration)
 Description: Storage tanks emissions summaries

Source	Description	Uncontrolled Working / Breathing (W/B) Losses (TANKS)		Working / Breathing (W/B) Losses with Safety Factor Applied (ton/yr)	Calculated Raw Flash Emissions (ProMax) (ton/yr)	Flash Emissions with Safety Factor Applied (ton/yr)	Total Uncontrolled Emissions (including Safety Factor) (ton/yr)
		(lb/yr)	(ton/yr)				
Tank T1	Condensate storage tank (300 bbl)						
	VOC <i>(includes facility-wide flash emissions)</i>	1,814.56	0.91	1.13	0.524	0.66	1.79
	2,2,4-Trimethylpentane (isooctane)	1.27	6.35E-04	7.94E-04	4.70E-04	5.87E-04	0.001
	Benzene	11.59	5.80E-03	7.24E-03	3.99E-03	4.99E-03	0.012
	Ethylbenzene	2.12	1.06E-03	1.33E-03	5.99E-04	7.49E-04	2.07E-03
	n-Hexane	172.40	0.086	1.08E-01	3.02E-02	3.78E-02	0.15
	Toluene	12.81	6.41E-03	8.01E-03	3.63E-03	4.54E-03	0.013
	Xylenes	4.49	2.25E-03	2.81E-03	9.00E-04	1.12E-03	3.93E-03
Tank T2, T14	Produced water storage tanks						
	VOC <i>aggregated emissions (exempt)</i>	Not specified	0.25	0.32	N/A	N/A	0.32
	Benzene	Not specified	0.01	8.46E-03	N/A	N/A	8.46E-03
	Ethylbenzene	Not specified	0.00	8.46E-04	N/A	N/A	8.46E-04
	n-Hexane	Not specified	0.02	2.66E-02	N/A	N/A	2.66E-02
	Toluene	Not specified	0.01	1.09E-02	N/A	N/A	1.09E-02
	Xylenes	Not specified	0.01	7.25E-03	N/A	N/A	7.25E-03
Tank T12, T13	Methanol storage tanks (500 gal each),						
	VOC <i>aggregated emissions (exempt)</i>	39.00	1.95E-02	0.02	N/A	N/A	2.44E-02
	Methanol	39.00	1.95E-02	0.02	N/A	N/A	2.44E-02
Tank T20, T21	Cleaner ('Angry Orange) tanks (50 gal each),						
	VOC <i>aggregated emissions (exempt)</i>	Not specified	0.027	3.31E-02	N/A	N/A	3.31E-02
	2-Butoxyethanol	Not specified	0.027	3.32E-02	N/A	N/A	3.32E-02
FACILITY STORAGE TANK EMISSIONS TOTALS		lb/yr	ton/yr	ton/yr	ton/yr	ton/yr	ton/yr
	VOC	1,853.56	1.21	1.51	0.52	0.66	2.16
	HAPs						
	2,2,4-Trimethylpentane (isooctane)	1.27	6.35E-04	7.94E-04	4.70E-04	5.87E-04	1.38E-03
	Benzene	11.59	1.26E-02	1.57E-02	3.99E-03	4.99E-03	2.07E-02
	Ethylbenzene	2.12	1.74E-03	2.17E-03	5.99E-04	7.49E-04	2.92E-03
	n-Hexane	172.40	0.11	0.13	3.02E-02	3.78E-02	0.17
	Methanol	39.00	0.02	0.02	N/A	N/A	2.44E-02
	Toluene	12.81	1.51E-02	1.89E-02	3.63E-03	4.54E-03	2.34E-02
	Xylene	4.49	8.05E-03	1.01E-02	9.00E-04	1.12E-03	1.12E-02
	Total HAP	243.68	0.17	0.21	0.040	0.050	0.26
	TAPs	Maximum TAP Emission Rate (lb/hr)	20.2.72.502 NMAC TAP Threshold (lb/hr)	TAP emission below 20.2.72.502 NMAC Threshold?	(ton/yr)	(ton/yr)	(ton/yr)
	2-Butoxyethanol	0.159	8.00	Yes	N/A	N/A	3.32E-02

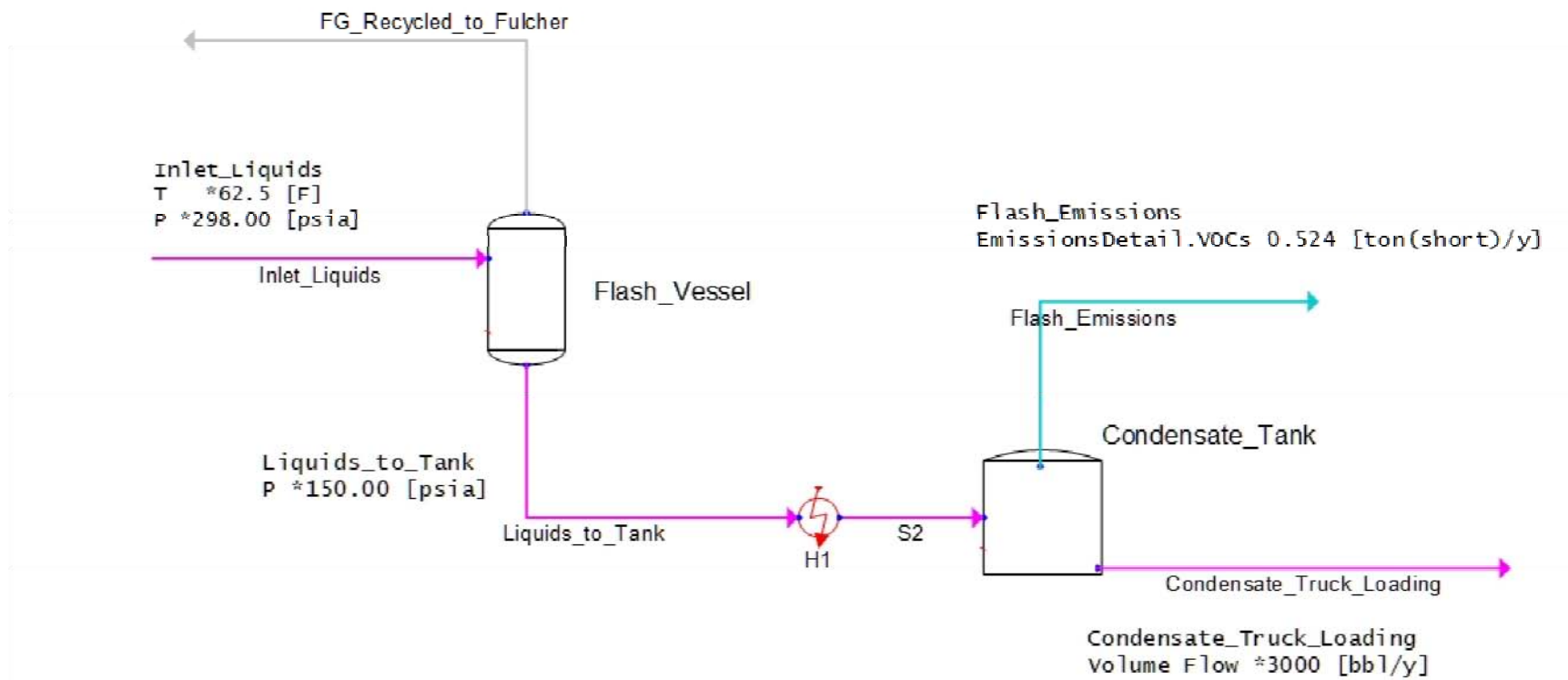
Working/breathing losses are calculated using TANKS 4.0.9d.

Facility-wide VOC flash emissions are calculated using ProMax process simulation software.

Safety Factor Applied = 1.25 (Applied to VOC and HAPs only)

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

North Crandell Condensate Flash Modeling



/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]	0.85	0.00	0.85	
Mass Flow [lb/h]	85.59	0.00	85.59	
Volume Flow [ft3/s]	0.001	0.000	0.001	
Fraction [Fraction]				
NITROGEN	1.78E-04	1.62E-01	1.78E-04	
METHANE	1.71E-03	0.4183	1.71E-03	
CARBON DIOXIDE	3.48E-04	0.0276	3.48E-04	
ETHANE	0.0023	0.0847	2.33E-03	
PROPANE	0.0118	0.1143	1.18E-02	
ISOBUTANE	0.0098	0.0356	9.80E-03	
n-BUTANE	0.0281	0.0664	2.81E-02	
ISOPENTANE	0.0349	0.0306	3.49E-02	
n-PENTANE	0.0352	0.0228	3.52E-02	
n-HEXANE	0.0715	0.0123	7.15E-02	
BENZENE	0.0106	0.0018	1.06E-02	
CYCLOHEXANE	0.0346	0.0040	3.46E-02	
n-HEPTANE	0.1040	0.0053	1.04E-01	
TOLUENE	0.0342	0.0014	3.42E-02	
n-OCTANE	0.4673	0.0073	4.67E-01	
ETHYLBENZENE	0.0145	1.98E-04	1.45E-02	
o-XYLENE	0.0369	2.97E-04	3.69E-02	
n-NONANE	0.0000	0.00E+00	0.00E+00	
n-DECANE	0.0000	0.00E+00	0.00E+00	
2,2,4-TRIMETHYLPENTANE	0.00	1.44E-04	2.74E-03	
CYCLOPENTANE	2.11E-04	7.49E-05	2.11E-04	
METHYLCYCLOHEXANE	9.89E-02	0.0048	9.89E-02	
MassFraction [Fraction]				
NITROGEN	4.97E-05	0.1358	4.97E-05	
METHANE	2.73E-04	0.2008	2.73E-04	
CARBON DIOXIDE	1.53E-04	0.0364	1.53E-04	
ETHANE	6.99E-04	0.0762	6.99E-04	
PROPANE	0.0052	0.1508	0.0052	
ISOBUTANE	0.0057	0.0620	0.0057	
n-BUTANE	0.0163	0.1155	0.0163	
ISOPENTANE	0.0251	0.0662	0.0251	
n-PENTANE	0.0254	0.0493	0.0254	
n-HEXANE	0.0615	0.0317	0.0615	
BENZENE	0.0082	0.0042	0.0082	
CYCLOHEXANE	0.0290	0.0101	0.0290	
n-HEPTANE	0.1039	0.0159	0.1039	
TOLUENE	0.0314	0.0038	0.0314	
n-OCTANE	0.5324	0.0248	0.5324	
ETHYLBENZENE	0.0154	6.29E-04	0.0154	
o-XYLENE	0.0391	9.45E-04	0.0391	
n-NONANE	0.00	0.00E+00	0.00	
n-DECANE	0.00	0.00E+00	0.00	
2,2,4-TRIMETHYLPENTANE	0.0031	4.94E-04	0.0031	
CYCLOPENTANE	1.48E-04	1.57E-04	1.48E-04	
METHYLCYCLOHEXANE	0.0969	0.0142	0.0969	

The HAP mole fractions above are input to the 'Normalized North Crandell 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]	62.5	62.5	62.5	62.5
P [psia]	298.00	298.00	298.00	298.00
Mole Flow [lbmol/h]	0.86	0.00	0.86	0.00
Mass Flow [lb/h]	85.81	0.00	85.81	0.00
Volume Flow [ft3/s]	0.001	0.000	0.001	0.000
Fraction [Fraction]				
NITROGEN	1.40E-03	0.3982	1.40E-03	1.40E-03
METHANE	0.0049	0.3960	0.0049	0.0049
CARBON DIOXIDE	0.0006	0.0155	0.0006	0.0006
ETHANE	0.0030	0.0406	0.0030	0.0030
PROPANE	0.0126	0.0511	0.0126	0.0126
ISOBUTANE	0.0100	0.0167	0.0100	0.0100
n-BUTANE	0.0284	0.0314	0.0284	0.0284
ISOPENTANE	0.0349	0.0157	0.0349	0.0349
n-PENTANE	0.0351	0.0118	0.0351	0.0351
n-HEXANE	0.0711	0.0071	0.0711	0.0711
BENZENE	0.0105	9.28E-04	0.0105	0.0105
CYCLOHEXANE	0.0344	2.19E-03	0.0344	0.0344
n-HEPTANE	0.1032	0.0034	0.1032	0.1032
TOLUENE	0.0339	7.98E-04	0.0339	0.0339
n-OCTANE	0.4639	5.17E-03	0.4639	0.4639
ETHYLBENZENE	0.0144	1.28E-04	0.0144	0.0144
o-XYLENE	0.0367	1.95E-04	0.0367	0.0367
n-NONANE	0.0000	0.00E+00	0.0000	0.0000
n-DECANE	0.0000	0.00E+00	0.0000	0.0000
2,2,4-TRIMETHYLPENTANE	0.00	9.44E-05	0.00	0.00
CYCLOPENTANE	0.00	3.77E-05	0.00	0.00
METHYLCYCLOHEXANE	0.10	2.90E-03	0.10	0.10
MassFraction [Fraction]				
NITROGEN	3.94E-04	3.89E-01	3.94E-04	3.94E-04
METHANE	7.81E-04	2.22E-01	7.81E-04	7.81E-04
CARBON DIOXIDE	2.44E-04	2.38E-02	2.44E-04	2.44E-04
ETHANE	8.91E-04	4.26E-02	8.91E-04	8.91E-04
PROPANE	0.0055	0.0786	0.0055	0.0055
ISOBUTANE	0.0058	0.0338	0.0058	0.0058
n-BUTANE	0.0165	0.0637	0.0165	0.0165
ISOPENTANE	0.0252	0.0397	0.0252	0.0252
n-PENTANE	0.0254	0.0298	0.0254	0.0254
n-HEXANE	0.0614	0.0212	0.0614	0.0614
BENZENE	0.0082	0.0025	0.0082	0.0082
CYCLOHEXANE	0.0290	0.0064	0.0290	0.0290
n-HEPTANE	0.1037	0.0119	0.1037	0.1037
TOLUENE	0.0313	0.0026	0.0313	0.0313
n-OCTANE	0.5311	0.0206	0.5311	0.5311
ETHYLBENZENE	0.0154	4.73E-04	0.0154	0.0154
o-XYLENE	0.0390	7.22E-04	0.0390	0.0390
n-NONANE	0.00	0.00E+00	0.00	0.00
n-DECANE	0.00	0.00E+00	0.00	0.00
2,2,4-TRIMETHYLPENTANE	0.0031	3.76E-04	0.0031	0.0031
CYCLOPENTANE	1.48E-04	9.22E-05	1.48E-04	1.48E-04
METHYLCYCLOHEXANE	0.0967	0.0100	0.0967	0.0967

/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]	63.4	63.4	63.4	
P [psia]	150.00	150.00	150.00	
Mole Flow [lbmol/h]	0.86	0.00	0.86	
Mass Flow [lb/h]	85.81	0.00	85.81	
Volume Flow [ft3/s]	0.001	0.000	0.001	
Fraction [Fraction]				
NITROGEN	1.40E-03	0.4174	1.40E-03	
METHANE	0.0049	0.4022	0.0049	
CARBON DIOXIDE	0.0006	0.0153	0.0006	
ETHANE	0.0030	0.0386	0.0030	
PROPANE	0.0126	0.0461	0.0126	
ISOBUTANE	0.0100	0.0143	0.0100	
n-BUTANE	0.0284	0.0268	0.0284	
ISOPENTANE	0.0349	0.0128	0.0349	
n-PENTANE	0.0351	0.0096	0.0351	
n-HEXANE	0.0711	0.0054	0.0711	
BENZENE	0.0105	7.51E-04	0.0105	
CYCLOHEXANE	0.0344	1.72E-03	0.0344	
n-HEPTANE	0.1032	0.0025	0.1032	
TOLUENE	0.0339	6.11E-04	0.0339	
n-OCTANE	0.4639	3.52E-03	0.4639	
ETHYLBENZENE	0.0144	9.22E-05	0.0144	
o-XYLENE	0.0367	1.40E-04	0.0367	
n-NONANE	0.0000	0.00E+00	0.0000	
n-DECANE	0.0000	0.00E+00	0.0000	
2,2,4-TRIMETHYLPENTANE	0.00	6.72E-05	0.00	
CYCLOPENTANE	0.00	3.10E-05	0.00	
METHYLCYCLOHEXANE	0.10	2.17E-03	0.10	
MassFraction [Fraction]				
NITROGEN	3.94E-04	0.4231	3.94E-04	
METHANE	0.0008	0.2335	0.0008	
CARBON DIOXIDE	2.44E-04	0.0244	2.44E-04	
ETHANE	0.0009	0.0420	0.0009	
PROPANE	0.0055	0.0735	0.0055	
ISOBUTANE	0.0058	0.0301	0.0058	
n-BUTANE	0.0165	0.0563	0.0165	
ISOPENTANE	0.0252	0.0333	0.0252	
n-PENTANE	0.0254	0.0250	0.0254	
n-HEXANE	0.0614	0.0168	0.0614	
BENZENE	0.0082	0.0021	0.0082	
CYCLOHEXANE	0.0290	0.0052	0.0290	
n-HEPTANE	0.1037	0.0089	0.1037	
TOLUENE	0.0313	2.04E-03	0.0313	
n-OCTANE	0.5311	0.0146	0.5311	
ETHYLBENZENE	0.0154	3.54E-04	0.0154	
o-XYLENE	0.0390	5.37E-04	0.0390	
n-NONANE	0.0000	0.00E+00	0.0000	
n-DECANE	0.0000	0.00E+00	0.0000	
2,2,4-TRIMETHYLPENTANE	0.00	2.78E-04	0.00	
CYCLOPENTANE	1.48E-04	7.86E-05	0.00	
METHYLCYCLOHEXANE	0.0967	0.0077	0.0967	

/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	0.00	1.00	
T [F]	61.8	61.8	61.8	
P [psia]	150.00	150.00	150.00	
Mole Flow [lbmol/h]	0.86	0.00	0.86	
Mass Flow [lb/h]	85.81	0.00	85.81	
Volume Flow [ft3/s]	0.001	0.000	0.001	
Fraction [Fraction]				
NITROGEN	0.0014	0.4203	0.0014	
METHANE	0.0049	0.4026	0.0049	
CARBON DIOXIDE	5.54E-04	0.0152	5.54E-04	
ETHANE	0.0030	0.0383	0.0030	
PROPANE	0.0126	0.0454	0.0126	
ISOBUTANE	0.0100	0.0141	0.0100	
n-BUTANE	0.0284	0.0262	0.0284	
ISOPENTANE	0.0349	0.0124	0.0349	
n-PENTANE	0.0351	0.0093	0.0351	
n-HEXANE	0.0711	0.0052	0.0711	
BENZENE	0.0105	7.26E-04	0.0105	
CYCLOHEXANE	0.0344	0.0017	0.0344	
n-HEPTANE	0.1032	0.0024	0.1032	
TOLUENE	0.0339	5.86E-04	0.0339	
n-OCTANE	0.4639	0.0034	0.4639	
ETHYLBENZENE	0.0144	8.80E-05	0.0144	
o-XYLENE	0.0367	1.33E-04	0.0367	
n-NONANE	0.00	0.00E+00	0.00	
n-DECANE	0.00	0.00E+00	0.00	
2,2,4-TRIMETHYLPENTANE	0.0027	6.46E-05	0.0027	
CYCLOPENTANE	2.10E-04	3.00E-05	2.10E-04	
METHYLCYCLOHEXANE	0.0982	0.0021	0.0982	
MassFraction [Fraction]				
NITROGEN	3.94E-04	0.4279	3.94E-04	
METHANE	7.81E-04	0.2347	7.81E-04	
CARBON DIOXIDE	2.44E-04	0.0244	2.44E-04	
ETHANE	8.91E-04	0.0418	8.91E-04	
PROPANE	0.0055	0.0727	0.0055	
ISOBUTANE	0.0058	0.0297	0.0058	
n-BUTANE	0.0165	0.0553	0.0165	
ISOPENTANE	0.0252	0.0326	0.0252	
n-PENTANE	0.0254	0.0244	0.0254	
n-HEXANE	0.0614	0.0163	0.0614	
BENZENE	0.0082	0.0021	0.0082	
CYCLOHEXANE	0.0290	0.0051	0.0290	
n-HEPTANE	0.1037	0.0086	0.1037	
TOLUENE	0.0313	0.0020	0.0313	
n-OCTANE	0.5311	0.0140	0.5311	
ETHYLBENZENE	0.0154	3.39E-04	0.0154	
o-XYLENE	0.0390	5.13E-04	0.0390	
n-NONANE	0.00	0.00E+00	0.00	
n-DECANE	0.00	0.00E+00	0.00	
2,2,4-TRIMETHYLPENTANE	0.0031	2.68E-04	0.0031	
CYCLOPENTANE	1.48E-04	7.65E-05	1.48E-04	
METHYLCYCLOHEXANE	0.0967	0.0075	0.0967	

/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]	0.01	0.01	0.00	
Mass Flow [lb/h]	0.22	0.22	0.00	
Volume Flow [ft3/s]	0.001	0.001	0.000	
Fraction [Fraction]				
NITROGEN	1.62E-01	1.62E-01	1.78E-04	
METHANE	0.4183	0.4183	1.71E-03	
CARBON DIOXIDE	0.0276	0.0276	3.48E-04	
ETHANE	0.0847	0.0847	0.0023	
PROPANE	0.1143	0.1143	0.0118	
ISOBUTANE	0.0356	0.0356	0.0098	
n-BUTANE	0.0664	0.0664	0.0281	
ISOPENTANE	0.0306	0.0306	0.0349	
n-PENTANE	0.0228	0.0228	0.0352	
n-HEXANE	0.0123	0.0123	0.0715	
BENZENE	0.0018	0.0018	0.0106	
CYCLOHEXANE	0.0040	0.0040	0.0346	
n-HEPTANE	0.0053	0.0053	0.1040	
TOLUENE	0.0014	0.0014	0.0342	
n-OCTANE	0.0073	0.0073	0.4673	
ETHYLBENZENE	1.98E-04	1.98E-04	0.0145	
o-XYLENE	2.97E-04	2.97E-04	0.0369	
n-NONANE	0.00E+00	0.00E+00	0.0000	
n-DECANE	0.00E+00	0.00E+00	0.0000	0
2,2,4-TRIMETHYLPENTANE	1.44E-04	1.44E-04	0.00	0
CYCLOPENTANE	0.00	7.49E-05	0.00	
METHYLCYCLOHEXANE	0.00	4.84E-03	0.10	
MassFraction [Fraction]				
NITROGEN	1.36E-01	1.36E-01	4.97E-05	7.814184
METHANE	0.2008	0.2008	2.73E-04	34.22612592
CARBON DIOXIDE	0.0364	0.0364	1.53E-04	
ETHANE	0.0762	0.0762	0.0007	
PROPANE	0.1508	0.1508	0.0052	
ISOBUTANE	0.0620	0.0620	0.0057	
n-BUTANE	0.1155	0.1155	0.0163	
ISOPENTANE	0.0662	0.0662	0.0251	
n-PENTANE	0.0493	0.0493	0.0254	
n-HEXANE	0.0317	0.0317	0.0615	
BENZENE	0.0042	0.0042	0.0082	
CYCLOHEXANE	0.0101	0.0101	0.0290	
n-HEPTANE	0.0159	0.0159	0.1039	
TOLUENE	0.0038	0.0038	0.0314	
n-OCTANE	0.0248	0.0248	0.5324	
ETHYLBENZENE	6.29E-04	6.29E-04	0.0154	
o-XYLENE	9.45E-04	9.45E-04	0.0391	
n-NONANE	0.00E+00	0.00E+00	0.0000	
n-DECANE	0.00E+00	0.00E+00	0.0000	
2,2,4-TRIMETHYLPENTANE	4.94E-04	4.94E-04	0.00	
CYCLOPENTANE	1.57E-04	1.57E-04	0.00	
METHYLCYCLOHEXANE	1.42E-02	1.42E-02	0.10	

VOC Mass Fraction of total =	0.5507	(sum of NMNE hydrocarbon fractions)
Mass flow (lb/hr) x VOC Mass Fraction of total =	0.120	VOC lb/hr
VOC lb/hr x 8760 hr/yr x 1 yr/8760 hr =	0.524	VOC tpy Flash_Emissions, North Crandell Condensate Flash Modeling (Main Flowsheet)

/FG_Recycled_to_Fulcher (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]	63.4	63.4	63.4	
P [psia]	150.00	150.00	150.00	
Mole Flow [lbmol/h]	0.00	0.00	0.00	
Mass Flow [lb/h]	0.00	0.00	0.00	
Volume Flow [ft3/s]	0.000	0.000	0.000	
Fraction [Fraction]				
NITROGEN	0.4174	0.4174	1.40E-03	
METHANE	0.4022	0.4022	0.0049	
CARBON DIOXIDE	0.0153	0.0153	0.0006	
ETHANE	0.0386	0.0386	0.0030	
PROPANE	0.0461	0.0461	0.0126	
ISOBUTANE	0.0143	0.0143	0.0100	
n-BUTANE	0.0268	0.0268	0.0284	
ISOPENTANE	0.0128	0.0128	0.0349	
n-PENTANE	0.0096	0.0096	0.0351	
n-HEXANE	0.0054	0.0054	0.0711	
BENZENE	7.51E-04	7.51E-04	0.0105	
CYCLOHEXANE	1.72E-03	1.72E-03	0.0344	
n-HEPTANE	0.0025	0.0025	0.1032	
TOLUENE	6.11E-04	6.11E-04	0.0339	
n-OCTANE	3.52E-03	3.52E-03	0.4639	
ETHYLBENZENE	9.22E-05	9.22E-05	0.0144	
o-XYLENE	1.40E-04	1.40E-04	0.0367	
n-NONANE	0.00E+00	0.00E+00	0.0000	
n-DECANE	0.00E+00	0.00E+00	0.0000	
2,2,4-TRIMETHYLPENTANE	6.72E-05	6.72E-05	0.00	
CYCLOPENTANE	0.00	3.10E-05	0.00	
METHYLCYCLOHEXANE	0.00	2.17E-03	0.10	
MassFraction [Fraction]				
NITROGEN	0.4231	0.4231	3.94E-04	
METHANE	0.2335	0.2335	0.0008	
CARBON DIOXIDE	0.0244	0.0244	2.44E-04	
ETHANE	0.0420	0.0420	0.0009	
PROPANE	0.0735	0.0735	0.0055	
ISOBUTANE	0.0301	0.0301	0.0058	
n-BUTANE	0.0563	0.0563	0.0165	
ISOPENTANE	0.0333	0.0333	0.0252	
n-PENTANE	0.0250	0.0250	0.0254	
n-HEXANE	0.0168	0.0168	0.0614	
BENZENE	0.0021	0.0021	0.0082	
CYCLOHEXANE	0.0052	0.0052	0.0290	
n-HEPTANE	0.0089	0.0089	0.1037	
TOLUENE	2.04E-03	2.04E-03	0.0313	
n-OCTANE	0.0146	0.0146	0.5311	
ETHYLBENZENE	3.54E-04	3.54E-04	0.0154	
o-XYLENE	5.37E-04	5.37E-04	0.0390	
n-NONANE	0.00E+00	0.00E+00	0.0000	
n-DECANE	0.00E+00	0.00E+00	0.0000	
2,2,4-TRIMETHYLPENTANE	2.78E-04	2.78E-04	0.00	
CYCLOPENTANE	7.86E-05	7.86E-05	0.00	
METHYLCYCLOHEXANE	7.72E-03	7.72E-03	0.10	

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

Identification

User Identification:	N Crandell - Condensate (300 bbl)
City:	San Juan Co., T30N, R11W, Sec 2
State:	New Mexico
Company:	Harvest Four Corners, LLC
Type of Tank:	Vertical Fixed Roof Tank
Description:	300 bbl Condensate Storage Tank Annual throughput = 126,000 gpy (= 3000 bpy)

Tank Dimensions

Shell Height (ft):	15.00
Diameter (ft):	12.00
Liquid Height (ft) :	14.00
Avg. Liquid Height (ft):	7.00
Volume (gallons):	12,600.00
Turnovers:	10.00
Net Throughput(gal/yr):	126,000.00
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

Meteorological 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

N Crandell - Condensate (300 bbl) - Vertical Fixed Roof Tank
San Juan Co., T30N, R11W, Sec 2, New Mexico

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg.	Min.	Max.		Avg.	Min.	Max.					
Condensate	All	67.36	53.93	80.79	59.23	2.6534	1.9967	3.4691	68.8175			100.56	
2,2,3-Trimethylpentane						0.4706	0.3138	0.6885	114.2300	0.0027	0.0007	114.23	Option 2: A=6.8254, B=1294.88, C=218.42
Benzene						1.4274	0.9846	2.0237	78.1100	0.0081	0.0064	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Butane						29.9323	23.3587	37.8099	58.1300	0.0279	0.4607	58.13	Option 1: VP60 = 26.098 VP70 = 31.306
Cyclohexane						1.4738	1.0254	2.0729	84.1600	0.0286	0.0232	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Cyclopentane						4.9596	3.6370	6.6394	70.1300	0.0001	0.0004	70.13	Option 1: VP60 = 4.177 VP70 = 5.24
Ethylbenzene						0.1396	0.0876	0.2162	106.1700	0.0152	0.0012	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Heptane (-n)						0.7600	0.5088	1.1128	100.2000	0.1025	0.0429	100.20	Option 3: A=37358, B=8.2585
Hexane (-n)						2.3100	1.6303	3.2059	86.1700	0.0747	0.0950	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isopentane						11.8640	8.7212	15.5743	72.1500	0.0248	0.1620	72.15	Option 1: VP60 = 10.005 VP70 = 12.53
Methylcyclohexane						0.6886	0.4673	0.9913	98.1800	0.0956	0.0362	98.18	Option 2: A=6.823, B=1270.763, C=221.42
Octane (-n)						0.1769	0.1254	0.2493	114.2300	0.5251	0.0512	114.23	Option 1: VP60 = .145444 VP70 = .188224
Pentane (-n)						8.0308	5.9649	10.6537	72.1500	0.0250	0.1106	72.15	Option 3: A=27691, B=7.558
Toluene						0.4136	0.2726	0.6120	92.1300	0.0310	0.0071	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Xylenes (mixed isomers)						0.1165	0.0728	0.1813	106.1700	0.0386	0.0025	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)

N Crandell - Condensate (300 bbl) - Vertical Fixed Roof Tank San Juan Co., T30N, R11W, Sec 2, New Mexico

Annual Emission Calculations

Standing Losses (lb):	1,266.7570
Vapor Space Volume (cu ft):	918.9159
Vapor Density (lb/cu ft):	0.0323
Vapor Space Expansion Factor:	0.2506
Vented Vapor Saturation Factor:	0.4667
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	918.9159
Tank Diameter (ft):	12.0000
Vapor Space Outage (ft):	8.1250
Tank Shell Height (ft):	15.0000
Average Liquid Height (ft):	7.0000
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):	0.0323
Vapor Molecular Weight (lb/lb-mole):	68.8175
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	2.6534
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:	0.2506
Daily Vapor Temperature Range (deg. R):	53.7176
Daily Vapor Pressure Range (psia):	1.4724
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	2.6534
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	1.9967
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	3.4691
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:	0.4667
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	2.6534
Vapor Space Outage (ft):	8.1250

Working Losses (lb):	547.8036
Vapor Molecular Weight (lb/lb-mole):	68.8175
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	2.6534
Annual Net Throughput (gal/yr.):	126,000.0000
Annual Turnovers:	10.0000
Turnover Factor:	1.0000
Maximum Liquid Volume (gal):	12,600.0000
Maximum Liquid Height (ft):	14.0000
Tank Diameter (ft):	12.0000
Working Loss Product Factor:	1.0000
 Total Losses (lb):	 1,814.5606

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

Emissions Report for: Annual

N Crandell - Condensate (300 bbl) - Vertical Fixed Roof Tank
San Juan Co., T30N, R11W, Sec 2, New Mexico

Components	Losses(lbs)		
	Working Loss	Breathing Loss	Total Emissions
Condensate	547.80	1,266.76	1,814.56
Butane	252.35	583.54	835.89
Isopentane	88.74	205.20	293.94
Pentane (-n)	60.59	140.10	200.69
Heptane (-n)	23.50	54.35	77.86
Octane (-n)	28.03	64.82	92.85
Benzene	3.50	8.09	11.59
Toluene	3.87	8.94	12.81
Ethylbenzene	0.64	1.48	2.12
Xylenes (mixed isomers)	1.36	3.14	4.49
Hexane (-n)	52.05	120.35	172.40
2,2,3-Trimethylpentane	0.38	0.89	1.27
Cyclohexane	12.73	29.45	42.18
Methylcyclohexane	19.85	45.91	65.76
Cyclopentane	0.22	0.51	0.72

Storage Tank Emissions Calculations

Unit Number: **T2, T14 - Exempt source demonstration**

Description: Produced Water Tanks

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

Throughput

81,220 gallons per year (gpy) Annual liquid throughput
1,934 barrels per year (bpy) Annual liquid throughput

2015 Title V appl throughput X 2
 barrel capacity x turnovers/yr

Emission Rates

Pollutant	Emission Factor, lb/bbl	Uncontrolled Emission Rate, tpy
VOC	0.262	0.253
Benzene	0.007	6.77E-03
Ethylbenzene	0.0007	6.77E-04
n-Hexane	0.022	2.13E-02
Toluene	0.009	8.70E-03
Xylene	0.006	5.80E-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

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

Identification

User Identification:	North Crandell T12, T13 (each) Methanol
City:	Aztec
State:	New Mexico
Company:	Williams Four Corners LLC
Type of Tank:	Vertical Fixed Roof Tank
Description:	500 Gallon Methanol Storage Tank

Tank Dimensions

Shell Height (ft):	5.00
Diameter (ft):	4.50
Liquid Height (ft) :	4.00
Avg. Liquid Height (ft):	2.00
Volume (gallons):	500.00
Turnovers:	12.00
Net Throughput(gal/yr):	6,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Dome
Height (ft)	0.00
Radius (ft) (Dome Roof)	4.50

Breather Vent Settings

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

Meteorological 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

North Crandell T12, T13 (each) Methanol - Vertical Fixed Roof Tank
Aztec, New Mexico

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg.	Min.	Max.		Avg.	Min.	Max.					
Methyl alcohol	All	58.54	51.41	65.66	56.17	1.3769	1.0943	1.7198	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)

North Crandell T12, T13 (each) Methanol - Vertical Fixed Roof Tank
Aztec, New Mexico

Annual Emission Calculations

Standing Losses (lb):	13.1946
Vapor Space Volume (cu ft):	52.6219
Vapor Density (lb/cu ft):	0.0079
Vapor Space Expansion Factor:	0.1075
Vented Vapor Saturation Factor:	0.8055
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	52.6219
Tank Diameter (ft):	4.5000
Vapor Space Outage (ft):	3.3087
Tank Shell Height (ft):	5.0000
Average Liquid Height (ft):	2.0000
Roof Outage (ft):	0.3087
Roof Outage (Dome Roof)	
Roof Outage (ft):	0.3087
Dome Radius (ft):	4.5000
Shell Radius (ft):	2.2500
Vapor Density	
Vapor Density (lb/cu ft):	0.0079
Vapor Molecular Weight (lb/lb-mole):	32.0400
Vapor Pressure at Daily Average Liquid	
Surface Temperature (psia):	1.3769
Daily Avg. Liquid Surface Temp. (deg. R):	518.2062
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):	515.8442
Tank Paint Solar Absorptance (Shell):	0.1700
Tank Paint Solar Absorptance (Roof):	0.1700
Daily Total Solar Insulation	
Factor (Btu/sqft day):	1,765.3167
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.1075
Daily Vapor Temperature Range (deg. R):	28.5089
Daily Vapor Pressure Range (psia):	0.6255
Breather Vent Press. Setting Range (psia):	0.0600
Vapor Pressure at Daily Average Liquid	
Surface Temperature (psia):	1.3769
Vapor Pressure at Daily Minimum Liquid	
Surface Temperature (psia):	1.0943
Vapor Pressure at Daily Maximum Liquid	
Surface Temperature (psia):	1.7198
Daily Avg. Liquid Surface Temp. (deg R):	518.2062
Daily Min. Liquid Surface Temp. (deg R):	511.0790
Daily Max. Liquid Surface Temp. (deg R):	525.3334
Daily Ambient Temp. Range (deg. R):	27.9250
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.8055
Vapor Pressure at Daily Average Liquid:	
Surface Temperature (psia):	1.3769
Vapor Space Outage (ft):	3.3087

Working Losses (lb):	6.3024
Vapor Molecular Weight (lb/lb-mole):	32.0400
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	1.3769
Annual Net Throughput (gal/yr.):	6,000.0000
Annual Turnovers:	12.0000
Turnover Factor:	1.0000
Maximum Liquid Volume (gal):	500.0000
Maximum Liquid Height (ft):	4.0000
Tank Diameter (ft):	4.5000
Working Loss Product Factor:	1.0000
Total Losses (lb):	19.4970

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

Emissions Report for: Annual

North Crandell T12, T13 (each) Methanol - Vertical Fixed Roof Tank
Aztec, New Mexico

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Methyl alcohol	6.30	13.19	19.50

Storage Tank Emissions Calculations

Unit Number: **T20, T21 - Exempt source demonstration**

Description: Angry Orange Storage Tanks (50 gallons each)

Note: The data on this worksheet apply to *aggregated* emissions from the units identified above.

Throughput

100	gallons per year (gpy)	Annual liquid throughput (aggregated)	2 x 50-gallon tanks (each) x 1 turnover/yr
2.38	barrels per year (bpy)	Annual liquid throughput	barrel capacity x turnovers/yr

Liquid Density

8.846	pounds per gallon (lb/gal)	Density of Angry Orange® cleaner	Specific gravity from MSDS (1.060) x density of water (8.345 lb/gal)
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VOC Content

0.53	pounds per gallon (lb/gal)	VOC [content] as packaged	Angry Orange MSDS
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Emission Rates

Pollutant	Liquid content, percent (%) by weight ^{1,2}	Emission Factor, lb/gal ³	Hourly Emission Rate, lb/hr	Annual Emission Rate, tpy
VOC	5.99	0.530	0.159	0.027
2-Butoxyethanol	6	0.531	0.159	0.027

¹ VOC percent by weight = (VOC lbs/gal / Liquid density lbs/gal) x 100

² 2-Butoxyethanol weight % value provided in the Angry Orange® cleaner MSDS.

³ Emission factor (lb/gallon) = Liquid density (lb/gal) x (Weight %/100)

Hourly emission rate (lb/hr) = Emission factor (lb/gal) x 1/3 gallon per hour.

Annual Emission Rate (tpy) = (gallons/year x lb/gallon) / 2,000 lb/ton

Truck Loading (Condensate) Emissions Calculations

Unit Number: **L1 - Exempt source demonstration**
 Description: **Truck Loading - Condensate**

Emission Factor

<p>0.6</p> <p>3.4691 psia (maximum)</p> <p>2.6534 psia (average)</p> <p>68.8175 lb/lb-mole</p> <p>80.79 °F (maximum)</p> <p>67.36 °F (average)</p> <p>540.46 °R (maximum)</p> <p>527.03 °R (average)</p> <p>3.30 lb/10³ gal (maximum)</p> <p>2.59 lb/10³ gal (average)</p>	<p>Saturation factor, S</p> <p>True vapor pressure of liquid, P</p> <p>True vapor pressure of liquid, P</p> <p>Molecular weight of vapors, M</p> <p>Temperature of liquid</p> <p>Temperature of liquid</p> <p>Temperature of liquid, T</p> <p>Temperature of liquid, T</p> <p>Emission factor, L</p> <p>Emission factor, L</p>	<p>AP-42, Table 5.2-1 (submerged loading & dedicated service)</p> <p>TANKS output file</p> <p>TANKS output file</p> <p>TANKS output file</p> <p>TANKS output file</p> <p>TANKS output file</p> <p>°F + 459.67</p> <p>°F + 459.67</p> <p>AP-42, Section 5.2, Equation 1</p> <p>AP-42, Section 5.2, Equation 1</p> $L = 12.46 \frac{SPM}{T}$
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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

<p>7.56 10³ gal/hr</p> <p>126.000 10³ gal/yr</p> <p>3,000 bbl/yr (bpy)</p>	<p>Maximum hourly liquid loaded</p> <p>Maximum annual liquid loaded</p> <p>Maximum annual liquid loaded</p>	<p>Harvest Four Corners, LLC</p> <p>bbl/y x 42 gal/bbl) /1000</p> <p>Main flowsheet 'Condensate_Truck_Loading',</p> <p>'Volume Flow *3000 bbl/y'</p>
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Steady-State Emission Rates

Pollutant	Uncontrolled Emission Rates,	
	pph	tpy
VOC	24.966	0.163

The short-term emission rates are calculated using the maximum true vapor pressure and maximum temperature of the liquid
 The annual emission rates are calculated using the average true vapor pressure and average temperature of the liquid
 Uncontrolled Emission Rate (pph) = lb/10³ gal x 10³ gal/hr
 Uncontrolled Emission Rate (tpy) = lb/10³ gal x 10³ gal/yr / 2,000 lb/ton

HAP pollutant	TANKS	Mass fraction of VOC	Emission Rates,	
	Emission Rate, lb/yr		pph	tpy
2,2,4-Trimethylpentane	1.27	3.89E-03	9.71E-04	6.35E-06
Benzene	11.59	3.55E-02	8.87E-03	5.80E-05
Ethylbenzene	2.12	6.50E-03	1.62E-03	1.06E-05
n-Hexane	172.40	0.5282	0.13	8.62E-04
Toluene	12.81	3.93E-02	9.80E-03	6.41E-05
m-Xylene	4.49	1.38E-02	3.43E-03	2.25E-05

Mass fraction of VOC (for truck loading emissions) calculated from the TANKS program results:
 Mass fraction of VOC (%) = Individual HAP pollutant Emission Rate (lb/yr) / Total VOC Emission Rate (lb/yr)
 Total VOC Emission Rate (lb/yr) = VOC ton/yr x 2000 lb/ton
 Emission Rate, pph = VOC pph x Mass fraction of VOC
 Emission Rate, tpy = VOC tpy x Mass fraction of VOC

Truck Loading Emissions Calculations

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

Emission Factor

<p>0.6</p> <p>0.4581 psia (maximum)</p> <p>0.3045 psia (average)</p> <p>18.02 lb/lb-mole</p> <p>77 °F (maximum)</p> <p>65 °F (average)</p> <p>536.67 °R (maximum)</p> <p>524.67 °R (average)</p> <p>0.11 lb/10³ gal (maximum)</p> <p>0.08 lb/10³ gal (average)</p>	<p>Saturation factor, S</p> <p>True vapor pressure of liquid, P</p> <p>True vapor pressure of liquid, P</p> <p>Molecular weight of vapors, M</p> <p>Temperature of liquid</p> <p>Temperature of liquid</p> <p>Temperature of liquid, T</p> <p>Temperature of liquid, T</p> <p>Emission factor, L</p> <p>Emission factor, L</p>	<p>AP-42, Table 5.2-1 (submerged loading& dedicated service)</p> <p>Estimated using Antoine's Equation (see calculations below)</p> <p>Estimated using Antoine's Equation (see calculations below)</p> <p>TANKS 4.0 Database</p> <p>Estimated (see calculations below)</p> <p>Estimated (see calculations below)</p> <p>°F + 459.67</p> <p>°F + 459.67</p> <p>AP-42, Section 5.2, Equation 1</p> <p>AP-42, Section 5.2, Equation 1</p>
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$$L = 12.46 \frac{SPM}{T}$$

Production Rate

<p>8.40 10³ gal/hr</p> <p>81.2 10³ gal/yr</p>	<p>Maximum hourly production rate</p> <p>Maximum annual production rate</p>	<p>Harvest</p> <p>Harvest</p>
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Steady-State Emission Rates

Pollutant	Uncontrolled Emission Rates,	
	pph	tpy
VOC	151.37	0.732

Uncontrolled Emission Rate (pph) = lb/10³ gal x 10³ gal/hr
 Uncontrolled Emission Rate (tpy) = lb/10³ gal x 10³ gal/yr / 2,000 lb/ton

Pollutants	Percent of VOC, %	Uncontrolled Emission Rates	
		pph	tpy
Benzene	2.67E-02	4.04E-02	1.96E-04
Ethylbenzene	2.67E-03	4.04E-03	1.96E-05
n-Hexane	8.40E-02	1.27E-01	6.14E-04
Toluene	3.44E-02	5.20E-02	2.51E-04
m-Xylene	2.29E-02	3.47E-02	1.68E-04

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)

Truck Loading Emissions Calculations

Unit Number: **L2 - Exempt source demonstration**

Description: Truck Loading

Vapor Pressure of Produced Water:

It is estimated that the true vapor pressure of produced water is approximately equal to the true vapor pressure of pure water. An estimate of the true vapor pressure for water is calculated using Antoine's equation (see AP-42, Section 7.1, Equation 1-25).

Maximum:

Temperature = 77 °F

$$\log P = A - (B / (C + T))$$

$$A = 8.07131$$

$$B = 1730.63$$

$$C = 233.426$$

$$T = 25.00 \text{ } ^\circ\text{C}$$

$$P = \text{mmHg}$$

$$P = 10^{(A - (B / (C + T)))}$$

$$P = 23.69 \text{ mmHg}$$

$$P = 0.4581 \text{ psi}$$

Note: 760 mmHg = 14.7 psia

Average:

Temperature = 65 °F

$$\log P = A - (B / (C + T))$$

$$A = 8.07131$$

$$B = 1730.63$$

$$C = 233.426$$

$$T = 18.33 \text{ } ^\circ\text{C}$$

$$P = \text{mmHg}$$

$$P = 10^{(A - (B / (C + T)))}$$

$$P = 15.75 \text{ mmHg}$$

$$P = 0.3045 \text{ psi}$$

Section 6.a

Green House Gas Emissions

(Submitting under 20.2.70, 20.2.72 20.2.74 NMAC)

Title V (20.2.70 NMAC), Minor NSR (20.2.72 NMAC), and PSD (20.2.74 NMAC) applicants must estimate and report greenhouse gas (GHG) emissions to verify the emission rates reported in the public notice, determine applicability to 40 CFR 60 Subparts, and to evaluate Prevention of Significant Deterioration (PSD) applicability. GHG emissions that are subject to air permit regulations consist of the sum of an aggregate group of these six greenhouse gases: carbon dioxide (CO₂), nitrous oxide (N₂O), methane (CH₄), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆).

Calculating GHG Emissions:

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

Sources for Calculating GHG Emissions:

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

Global Warming Potentials (GWP):

Applicants must use the Global Warming Potentials codified in Table A-1 of the most recent version of 40 CFR 98 Mandatory Greenhouse Gas Reporting. The GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to that of one unit mass of CO₂ over a specified time period.

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

Metric to Short Ton Conversion:

Short tons for GHGs and other regulated pollutants are the standard unit of measure for PSD and title V permitting programs. 40 CFR 98 Mandatory Greenhouse Reporting requires metric tons.

1 metric ton = 1.10231 short tons (per Table A-2 to Subpart A of Part 98 – Units of Measure Conversions)

Greenhouse Gas (GHG) Emissions

Greenhouse gas (GHG) emissions are provided in this section. Carbon dioxide (CO₂), methane (CH₄) emissions, nitrous oxide (N₂O) (combustion sources only), and total GHG are reported in tons per year (tpy). Carbon dioxide equivalent (CO₂e) emissions (including CO₂, N₂O and CH₄) are reported in metric tonnes per year. The CO₂e is calculated by summing the estimated CO₂ emissions with the CH₄ emissions (adjusted for the Global Warming Potential (GWP) of the CH₄) and the N₂O emissions (adjusted for the GWP of the N₂O). 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 CH₄ and N₂O 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 (CO₂), methane (CH₄), and nitrous oxide (N₂O) exhaust emissions from the combustion equipment (reciprocating internal combustion engines) are calculated from emission factors from 40 CFR 98, Part C, Tables C-1 & C-2, and the engine 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 method 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 CO₂ and CH₄ 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 type of VOC emissions and the molar fractions of CO₂ and CH₄ in the natural gas extended analysis.

Reciprocating Compressor Venting Emissions. Annual GHG emissions from reciprocating compressor vented emissions, including compressor blowdown valve leaks, rod packing leaks and isolation valve leaks, are estimated from the number of compressors; the estimated compressor operating times; the CO₂ and CH₄ molar composition of the gas stream; and the density of the GHG gases according to 40 CFR 98, Subpart W, equation W-36.

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 rod packing emissions that occur when compressor(s) are in operation. Therefore, the PTE is calculated assuming 8,760 hours per year of compressor operation (corresponding with isolation valve leakage occurring zero hours per year).

Equipment Leaks Emissions. GHG emissions from facility-wide equipment leaks (unit F1) 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 CO₂ and CH₄ 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 CO₂ and CH₄, 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. GHG emissions from the condensate flash emissions are taken from the ProSim output file. GHG emissions from working and breathing losses from the produced water, waste water, lube oil and used lube oil, TEG, and other insignificant storage tanks are considered to be zero, based on the stored contents are either non-flashing liquids or post-flashed liquid.

Similarly, any liquids transferred during truck loading do not contain appreciable amounts of any gases, including GHG.

Green House Gas Emissions Data and Calculations

Sources	Facility Total Emissions				
	CO2, tpy	N2O, tpy	CH4, tpy	GHG, tpy	CO2e, tpy
Engine & Turbine Exhaust	18,031.36	0.034	0.34	18,031.73	18049.98
SSM Blowdowns	6.9571	-	122.0340	128.99	3057.81
Reciprocating Compressor Venting	9.53	-	167.49	177.02	4196.73
Equipment Leaks	0.54	-	9.48	10.01	237.42
Natural Gas Pneumatic Device Venting	2.52	-	44.11	46.63	1105.22
Natural Gas Driven Pneumatic Pump Venting	0.12	-	2.11	2.23	52.94
Malfunctions	2.71	-	47.50	50.20	1190.12
Separators & Storage Tanks (Flash Emissions)	0.03	-	0.19	0.23	4.82
Total	18,053.77	3.40E-02	393.25	18,447.05	27,895.04

Engine & Turbine Exhaust Emissions

Unit Numbers	Description	Emission Factors			Emission Rates			
		CO2, kg/MMBtu	N2O, kg/MMBtu	CH4, kg/MMBtu	CO2, tpy	N2O, tpy	CH4, tpy	CO2e, tpy
2	Waukesha L7042GL	53.06	1.00E-04	1.00E-03	6,010.45	1.13E-02	1.13E-01	6,016.66
4	Waukesha L7042GL	53.06	1.00E-04	1.00E-03	6,010.45	1.13E-02	1.13E-01	6,016.66
5	Waukesha L7042GL	53.06	1.00E-04	1.00E-03	6,010.45	1.13E-02	1.13E-01	6,016.66
Total					18,031.36	0.034	0.34	18,049.98

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
2	Waukesha L7042GL	Nat. Gas	8,760	10.58	11.76	102,979
4	Waukesha L7042GL	Nat. Gas	8,760	10.58	11.76	102,979
5	Waukesha L7042GL	Nat. Gas	8,760	10.58	11.76	102,979

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	N2O Emission Factors, lb/scf	CH4 Emission Factors, lb/scf	Emission Rates			
						CO2, tpy	N2O, tpy	CH4, tpy	CO2e, tpy
SSM	SSM Blowdowns	6,723,300	0.0021	--	0.0363	6.96	-	122.03	3,057.81

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

Reciprocating Compressor Venting Emissions

Unit Numbers	Description	Emission Rates			
		CO2, tpy	N2O, tpy	CH4, tpy	CO2e, tpy
NA	Blowdown Valve Leakage	0.91	-	16.00	400.89
NA	Rod Packing Emissions	8.62	-	151.49	3,795.85
NA	Isolation Valve Leakage	0.00	-	0.00	-
	Total	9.53	-	167.49	4,196.73

Operating or standby mode - includes blowdown valve leakage through blowdown vent stack

Operating mode - includes rod packing emissions

Non-operating depressurized mode - includes isolation valve leakage through open blowdown vents (without blind flanges)

Rod packing gas emissions assume 4 cylinders per compressor

A combination of equations W-26 & W-36 (Subpart W) is used to calculate reciprocating 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	3	33.5	8,760	1.78	85.87	0.0526	0.0192
NA	Rod Packing Emissions	3	317.2	8,760	1.78	85.87	0.0526	0.0192
NA	Isolation Valve Leakage	3	10.5	0	1.78	85.87	0.0526	0.0192

The number of compressors is provided by Harvest

Blowdown valve leakage (33.5 scf/hr) and rod packing emissions occur in operating mode

Blowdown valve leakage (10.5 scf/hr) occurs in standby pressurized mode

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)

Equipment Leaks Emissions

Unit Numbers	Description	Emission Rates			
		CO2, tpy	N2O, tpy	CH4, tpy	CO2e, tpy
NA	Valves	0.4	-	7.3	182.44
NA	Connectors	0.1	-	0.9	22.99
NA	Open-Ended Lines	0.0	-	0.5	12.74
NA	Pressure Relief Valves	0.0	-	0.8	19.25
	Total	0.54	-	9.48	237.42

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	378	0.121	1.78	85.87	8,760	0.0526	0.0192
NA	Connectors	339	0.017	1.78	85.87	8,760	0.0526	0.0192
NA	Open-Ended Lines	103	0.031	1.78	85.87	8,760	0.0526	0.0192
NA	Pressure Relief Valves	25	0.193	1.78	85.87	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	N2O, tpy	CH4, tpy	CO2e, tpy
NA	Continuous High Bleed Pneumatic Devices	4	37.3	8,760	1.35	-	23.70	593.91
NA	Intermittent Bleed Pneumatic Devices	9	13.5	8,760	1.10	-	19.30	483.65
NA	Continuous Low Bleed Pneumatic Devices	5	1.39	8,760	0.06	-	1.10	27.67
Total					2.52	-	44.11	1,105.22

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

$$\text{CO2 Emission Rates (tpy)} = \# \times \text{scf/hr/device} \times (\text{CO2 Content (mole \%)} / 100) \times \text{CO2 Conversion Factors (tonne CO2e/scf)} \times \text{hr/yr} \\ \times (2,204.6 \text{ lb/tonne} / 2,000 \text{ lb/ton}) / \text{CO2 Global Warming Potentials (tonne CO2e/tonne CO2)}$$

$$\text{CH4 Emission Rates (tpy)} = \# \times \text{scf/hr/device} \times (\text{CH4 Contents (mole \%)} / 100) \times \text{CH4 Conversion Factors (tonne CO2e/scf)} \times \text{hr/yr} \\ \times (2,204.6 \text{ lb/tonne} / 2,000 \text{ lb/ton}) / \text{CH4 Global Warming Potentials (tonne CO2e/tonne CH4)}$$

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	1.78	85.87	5.262E-05	4.790E-04	1	25
NA	Continuous Low Bleed Pneumatic Devices	1.78	85.87	5.262E-05	4.790E-04	1	25
NA	Intermittent Bleed Pneumatic Devices	1.78	85.87	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	N2O, tpy	CH4, tpy	CO2e, tpy
NA	Pneumatic Pump Venting	1	13.3	8,760	0.12	-	2.11	52.94

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

$$\text{CO2 Emission Rate (tpy)} = \# \times \text{scf/hr/pump} \times (\text{CO2 Content (mole \%)} / 100) \times \text{CO2 Conversion Factor (tonne CO2e/scf)} \times \text{hr/yr} \\ \times (2,204.6 \text{ lb/tonne} / 2,000 \text{ lb/ton}) / \text{CO2 Global Warming Potentials (tonne CO2e/tonne CO2)}$$

$$\text{CH4 Emission Rate (tpy)} = \# \times \text{scf/hr/pump} \times (\text{CH4 Content (mole \%)} / 100) \times \text{CH4 Conversion Factor (tonne CO2e/scf)} \times \text{hr/yr} \\ \times (2,204.6 \text{ lb/tonne} / 2,000 \text{ lb/ton}) / \text{CH4 Global Warming Potentials (tonne CO2e/tonne CH4)}$$

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	1.78	85.87	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

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	N2O, tpy	CH4, tpy	CO2e, tpy
M1	Malfunctions	19.60	2.90	4.01	70.27	10.00	2.71	-	47.50	1,190.12

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)

$$\text{CO2 Emission Rate (tpy)} = \text{VOC Emission Rate (tpy)} \times (\text{Total Component Weight (lb/lb-mole)} / \text{VOC Component Weight (lb-lb-mole)}) \\ \times (\text{CO2 Weight \% of Total} / 100)$$

$$\text{CH4 Emission Rate (tpy)} = \text{VOC Emission Rate (tpy)} \times (\text{Total Component Weight (lb/lb-mole)} / \text{VOC Component Weight (lb-lb-mole)}) \\ \times (\text{CH4 Weight \% of Total} / 100)$$

Green House Gas Emissions Data and Calculations

Separators & Storage Tanks (Flash Emissions)

Unit Number	Description	Emission Rates		Operating Time, hr/yr	Emission Rates			
		CO2, pph	CH4, pph		CO2, tpy	N2O, tpy	CH4, tpy	CO2e, tpy
T1	Separator, Condensate Tank, Loading	--	--	--	3.46E-02	-	1.91E-01	4.82
					0.00E+00	-	0.00	-
					0.00E+00	-	0.00	-
		Total			0.0346	-	0.1912	4.82

Emission rates (tpy) = ProMax /Tank_Flash_Emissions (Material Stream)' Equilibrium Results' Mass Flow [lb/h] x (8760 hr/yr /2000 lb/ton) x 'MassFraction [Fraction]' for individual GHG (i.e., CO2 or CH4).

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	1.7841	44.01	0.79	4.0060	0.0021
Hydrogen Sulfide	0.0000	34.07	0.00	0.0000	0.0000
Nitrogen	0.1869	28.01	0.05	0.2671	0.0001
Methane	85.8661	16.04	13.77	70.2703	0.0363
Ethane	6.9495	30.07	2.09	10.6618	0.0055
Propane	2.8103	44.09	1.24	6.3217	0.0033
IsoButane	0.5375	58.12	0.31	1.5937	0.0008
Normal Butane	0.7775	58.12	0.45	2.3055	0.0012
IsoPentane	0.2910	72.15	0.21	1.0710	0.0006
Normal Pentane	0.2132	72.15	0.15	0.7846	0.0004
Cyclopentane	0.0125	70.14	0.01	0.0447	0.0000
n-Hexane	0.0931	86.17	0.08	0.4093	0.0002
Cyclohexane	0.0340	84.16	0.03	0.1458	0.0001
Other Hexanes	0.2047	86.18	0.18	0.8998	0.0005
Heptanes	0.0776	100.20	0.08	0.3965	0.0002
Methylcyclohexane	0.0705	98.19	0.07	0.3529	0.0002
2,2,4-Trimethylpentane	0.0043	100.21	0.00	0.0220	0.0000
Benzene	0.0135	78.11	0.01	0.0536	0.0000
Toluene	0.0244	92.14	0.02	0.1147	0.0001
Ethylbenzene	0.0005	106.17	0.00	0.0024	0.0000
Xylenes	0.0069	106.17	0.01	0.0371	0.0000
C8+ heavies	0.0427	110.00	0.05	0.2394	0.0001
Total	100.0001		19.60	100.0000	0.0517
VOC			2.90	--	0.0076

Gas stream composition obtained from the N Crandell inlet gas streams ('N Crandell' and 'Hampton') extended gas analyses sampled May 2, 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:

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

Please see the following pages.

STANDARD EQUIPMENT

AIR CLEANER – Two, 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. Induction hardened.

CYLINDER HEADS – Twelve interchangeable. Two hard faced intake and two hard faced exhaust valves per cylinder. Hard faced intake and exhaust valve seat inserts. Roller valve lifters and hydraulic push rods. Includes prechamber and related fuel control valves.

ENGINE ROTATION – Counterclockwise when facing flywheel.

ENGINE MONITORING DEVICES – Engine thermocouples, K-type, for jacket water temperature, lube oil temperature, intake manifold temperature, individual cylinder exhaust temperature and a common pre turbine temperatures, one on each bank. Magnetic pickup wired for customer supplied tachometer. Lube oil pressure and intake manifold pressure sensing lines are terminated in a common bulk head.

EXHAUST OUTLET – Single vertical at rear. Flexible stainless steel connection with 8" (203 mm) pipe flange.

FLYWHEEL – Approx. $WR^2 = 155000 \text{ lb-in}^2$; 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 – Dual natural gas, 4" (102 mm) duplex updraft carburetors. Two Fisher Model 99, 2" (51 mm) gas regulators, 30 – 50 psi (241 – 345 kPa) gas inlet pressure required. Prechamber fuel system and control logic.

GOVERNOR – Woodward UG-8 LD 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.

INTERCOOLER – Air-to-water.

LEVELING BOLTS

LIFTING EYES

LUBRICATION – Full pressure. Gear type pump. Full flow filter, 36 gallon (136 litres) capacity, not mounted. Includes flexible connections. Includes lube oil strainer, mounted on engine. Air/gas motor driven prelube pump. Requires final piping.

MANIFOLDS – Exhaust, (2) water cooled.

OIL COOLER – With thermostatic temperature controller and pressure regulating valve. Not mounted.

OIL PAN – Base type. 90 gallon (340 litres) capacity including filter and cooler.

PAINT – Oilfield orange primer.

PISTONS – Aluminum with floating pin. 10.5:1 compression ratio. Oil cooled.

SHIPPING SKID – Steel for domestic truck or rail.

TURBOCHARGERS – Two, dry type. Wastegate controlled.

VIBRATION DAMPER – Two, viscous type. Guard included with remote mounted radiator or no radiator.

WATER CIRCULATING SYSTEM

Auxiliary Circuit – For oil cooler and intercooler. Pump is belt driven from crankshaft pulley. Includes thermostatic valve.

Engine Jacket – Belt driven water circulating pump, cluster type thermostatic temperature regulating valve, full flow bypass type. Flange connections and mating flanges for (2) 4" (102 mm) inlets and (1) 5" (127 mm) outlet.

WAUKESHA CUSTOM ENGINE CONTROL, DETONATION SENSING MODULE (DSM) – Includes individual cylinder sensors, Detonation Sensing Module, filter and cables. Device is compatible with Waukesha CEC Ignition Module only. Sensors are mounted and wired to engine junction box. Detonation Sensing Module and filter are shipped loose. One 11 ft. cable provided for connection between engine junction box and filter. One each 15 ft. cable provided for connection between filter and DSM and Ignition Module and DSM. One 20 ft. cable provided for power and ground for filter. All cables are shipped loose. Packager is responsible for power supply and ground to the DSM. 24V DC power is required. The DSM meets Canadian Standards Association Class 1, Group D, Division 2, hazardous location requirements.

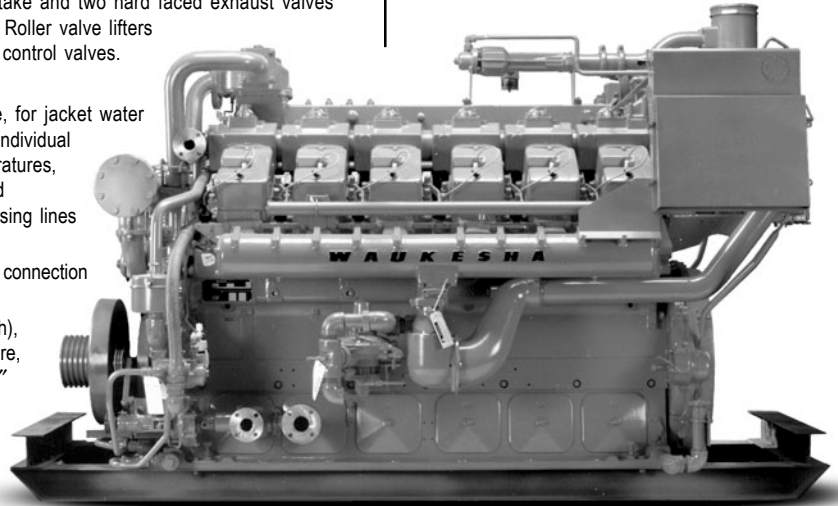
Waukesha[®]

VHP

L7042GL

VHP™ Series Gas Engine

886 - 1547 BHP



Model L7042GL Turbocharged and Intercooled, Twelve Cylinder, Lean Combustion, Four-Cycle Gas Engine

SPECIFICATIONS

Cylinders V 12	Starting System 125 - 150 psi air/gas 24/32V electric
Piston Displacement 7040 cu. in. (115 L)	Dry Weight 21,000 lb. (9525 kg)
Bore & Stroke 9.375" x 8.5" (238 x 216 mm)	Full Load Exhaust Emissions Nox - 1.50 g/bhp-hr CO - 2.65 g/bhp-hr HC - 1.00 g/bhp-hr (non-methane)
Compression Ratio 10.5:1	
Jacket Water System Capacity 107 gal. (405 L)	
Lube Oil Capacity 90 gal. (340 L)	

Waukesha Engine
 **ISO 9001**
CERTIFIED

POWER RATINGS: L7042GL VHP SERIES GAS ENGINES

Brake Horsepower (kWb Output)							
Model	I.C. Water Inlet Temp. °F (°C) (T _{cr})	C.R.	800 rpm	900 rpm	1000 rpm	1100 rpm	1200 rpm
High Speed Turbo ¹	85° (29°)	10.5:1	928 (692)	1160 (865)	1289 (961)	1418 (1057)	1547 (1154)
High Speed Turbo ¹	130° (54°)	10.5:1	886 (661)	1108 (826)	1232 (919)	1355 (1010)	1478 (1102)
Low Speed Turbo ²	85° (29°)	10.5:1	1031 (769)	1160 (865)	1289 (961)	—	—
Low Speed Turbo ²	130° (54°)	10.5:1	985 (735)	1108 (826)	1232 (919)	—	—

¹High speed turbocharger match – 1001-1200 rpm

²Low speed turbocharger match – 700-1000 rpm

Rating Standard: All models: Ratings are based on ISO 3046/1-1995 with mechanical efficiency of 90% and auxiliary water temperature T_{cr} (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/ft³ (35.3 MJ/nm³) SLHV value, with a 91 Waukesha Knock Index®.

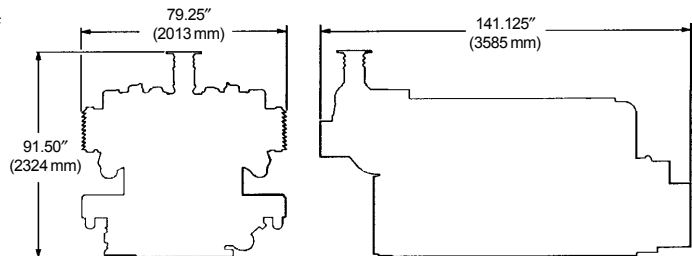
For conditions or fuels other than standard, the Waukesha Engine Sales Engineering Department.

PERFORMANCE: L7042GL VHP SERIES GAS ENGINES

English		130° F ICW		85° F ICW		Metric		54° C ICW		29° C ICW	
Low NO _x Settings	RPM	1200	1000	1200	1000	RPM	1200	1000	1200	1000	
	Power (Bhp)	1478	1232	1547	1289	Power (kWb)	1103	919	1154	962	
	BSFC (Btu/bhp-hr)	7155	6815	7180	6840	BSFC (kJ/kW-hr)	10124	9643	10160	9679	
	NO _x (grams/bhp-hr)	0.90	0.90	0.70	0.70	NO _x (g/nm ³)	0.37	0.37	0.29	0.29	
	CO (grams/bhp-hr)	2.75	2.65	2.65	2.55	CO (g/nm ³)	1.14	1.10	1.10	1.05	
	NMHC (grams/bhp-hr)	1.00	1.00	1.10	1.10	NMHC (g/nm ³)	0.41	0.41	0.45	0.45	
Low Fuel Consumption Settings	BSFC (Btu/bhp-hr)	6910	6615	6935	6640	BSFC (kJ/kW-hr)	9778	9360	9813	9396	
	NO _x (grams/bhp-hr)	1.50	1.60	1.30	1.40	NO _x (g/nm ³)	0.62	0.66	0.54	0.58	
	CO (grams/bhp-hr)	3.00	2.75	2.90	2.65	CO (g/nm ³)	1.24	1.14	1.20	1.10	
	NMHC (grams/bhp-hr)	0.70	1.00	0.80	1.10	NMHC (g/nm ³)	0.29	0.41	0.33	0.45	

NOTES:

- Performance ratings are based on ISO 3046/1-1995 with mechanical efficiency of 90% and T_{cr} limited to ± 10° F.
- Fuel consumptions based on ISO 3046/1-1995 with a +5% tolerance for commercial quality natural gas having a 900 Btu/ft³ saturated low heat value.
- Data based on standard conditions of 77° F (25° C) ambient temperature, 29.53 inches Hg (100kPa) barometric pressure, 30% relative humidity (0.3 inches Hg / 1 kPa water vapor pressure).
- Data will vary due to variations in site conditions. For conditions and/or fuels other than standard, consult the Waukesha Engine Sales Engineering Department.



Waukesha

WAUKESHA ENGINE
DRESSER, INC.

1000 West St. Paul Avenue
Waukesha, WI 53188-4999
Phone: (262) 547-3311 Fax: (262) 549-2795
waukeshaengine.dresser.com

Bulletin 7005 0102

WAUKESHA ENGINE
DRESSER INDUSTRIAL PRODUCTS, B.V.

Farmsumerweg 43, Postbus 330
9900 AH Appingedam, The Netherlands
Phone: (31) 596-652222 Fax: (31) 596-628111

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.



Prepared For:

Mr. Steve Jackson
Williams Midstream

INFORMATION PROVIDED BY WAUKESHA

Engine: L7042GL
Horsepower: 1480
RPM: 1200
Compression Ratio: 10.5:1
Exhaust Flow Rate: 8166 ft³/min
Exhaust Temperature: 709 °F
Reference: 6124-57
Fuel: Natural Gas
Annual Operating Hours: 8760

Uncontrolled Emissions Data

NO_x: 1.50 g/bhp-hr
CO: 2.65 g/bhp-hr
THC: 5.50 g/bhp-hr
NMHC: 1.00 g/bhp-hr
NMNEHC: 0.25 g/bhp-hr
HCHO: 0.29 g/bhp-hr
Oxygen: 9.80 %

POST CATALYST EMISSIONS

NO_x: Unaffected
CO: >93% reduction
VOC: >50% reduction
HCHO: >76% reduction

REPLACEMENT CATALYST ELEMENT

Model: **RE-3350-Z**
Catalyst Type: Oxidation, Precious group metals
Element Qty: 1
Substrate Type: BRAZED
Manufacturer: EMIT Technologies, Inc.
Element Size: Round, 33.5" x 3.5"



WARRANTY

EMIT Technologies, Inc. warrants that the goods supplied will be free from defects in workmanship by EMIT Technologies, Inc. for a period of one (1) year from date of shipment. EMIT Technologies, Inc. will not be responsible for any defects which result from improper use, neglect, failure to properly maintain or which are attributable to defects, errors or omissions in any drawings, specifications, plans or descriptions, whether written or oral, supplied to EMIT Technologies, Inc. by Buyer.

Catalyst performance will be guaranteed for a period of 1 year from installation, or 8760 operating hours, whichever comes first. The catalyst shall be operated with an automatic air/fuel ratio controller. The performance guarantee shall not cover the effects of excessive ash masking due to operation at low load, improper engine maintenance, or inappropriate lubrication oil. The performance guarantee shall not cover the effects of continuous engine misfires (cylinder or ignition) exposing the catalyst to excessive exothermic reaction temperatures.

The exhaust temperature operating range at the converter inlet is 600°F minimum for oxidation catalyst and 750 °F for NSCR catalyst and 1250°F maximum.

If a high temperature shut down switch is not installed, thermal deactivation of catalyst at temperatures above 1300 °F is not covered.

The catalyst conversion efficiencies (% reduction) will be guaranteed for engine loads of 50 to 100 percent.

Engine lubrication oil shall contain less than 0.6% ash (by weight) with a maximum allowable specific oil consumption of 0.01 gal/bhp-hr. The maximum ash loading on the catalyst shall be limited to 350 g/m³. Phosphorous and zinc additives are limited to 0.03% (by weight).

The catalyst must not be exposed to the following know poisoning agents, including: iron, nickel, sodium, chromium, arsenic, zinc, lead, phosphorous, silicon, potassium, magnesium, copper, tin, and mercury. Total poison concentrations in the gas are limited to 0.3 ppm.

Table 3.2-2. UNCONTROLLED EMISSION FACTORS FOR 4-STROKE LEAN-BURN ENGINES^a
(SCC 2-02-002-54)

Pollutant	Emission Factor (lb/MMBtu) ^b (fuel input)	Emission Factor Rating
Criteria Pollutants and Greenhouse Gases		
NO _x ^c 90 - 105% Load	4.08 E+00	B
NO _x ^c <90% Load	8.47 E-01	B
CO ^c 90 - 105% Load	3.17 E-01	C
CO ^c <90% Load	5.57 E-01	B
CO ₂ ^d	1.10 E+02	A
SO ₂ ^e	5.88 E-04	A
TOC ^f	1.47 E+00	A
Methane ^g	1.25 E+00	C
VOC ^h	1.18 E-01	C
PM10 (filterable) ⁱ	7.71 E-05	D
PM2.5 (filterable) ⁱ	7.71 E-05	D
PM Condensable ^j	9.91 E-03	D
Trace Organic Compounds		
1,1,2,2-Tetrachloroethane ^k	<4.00 E-05	E
1,1,2-Trichloroethane ^k	<3.18 E-05	E
1,1-Dichloroethane	<2.36 E-05	E
1,2,3-Trimethylbenzene	2.30 E-05	D
1,2,4-Trimethylbenzene	1.43 E-05	C
1,2-Dichloroethane	<2.36 E-05	E
1,2-Dichloropropane	<2.69 E-05	E
1,3,5-Trimethylbenzene	3.38 E-05	D
1,3-Butadiene ^k	2.67E-04	D
1,3-Dichloropropene ^k	<2.64 E-05	E
2-Methylnaphthalene ^k	3.32 E-05	C
2,2,4-Trimethylpentane ^k	2.50 E-04	C
Acenaphthene ^k	1.25 E-06	C

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	1.7841	44.01	0.7852	4.0060	2.070E-03
Hydrogen sulfide	0.0000	34.07	0.0000	0.0000	0.000E+00
Nitrogen	0.1869	28.01	0.0524	0.2671	1.380E-04
Methane	85.8661	16.04	13.7729	70.2703	3.630E-02
Ethane	6.9495	30.07	2.0897	10.6618	5.508E-03
Propane	2.8103	44.09	1.2390	6.3217	3.266E-03
Isobutane	0.5375	58.12	0.3124	1.5937	8.233E-04
n-Butane	0.7775	58.12	0.4519	2.3055	1.191E-03
Isopentane	0.2910	72.15	0.2099	1.0710	5.533E-04
n-Pentane	0.2132	72.15	0.1538	0.7846	4.053E-04
Cyclopentane	0.0125	70.14	0.0088	0.0447	2.311E-05
n-Hexane	0.0931	86.17	0.0802	0.4093	2.115E-04
Cyclohexane	0.0340	84.16	0.0286	0.1458	7.531E-05
Other hexanes	0.2047	86.18	0.1764	0.8998	4.649E-04
Heptanes	0.0776	100.20	0.0777	0.3965	2.048E-04
Methylcyclohexane	0.0705	98.19	0.0692	0.3529	1.823E-04
2,2,4-Trimethylpentane	0.0043	100.21	0.0043	0.0220	1.136E-05
Benzene	0.0135	78.11	0.0105	0.0536	2.769E-05
Toluene	0.0244	92.14	0.0225	0.1147	5.926E-05
Ethylbenzene	0.0005	106.17	0.0005	0.0024	1.259E-06
Xylenes	0.0069	106.17	0.0073	0.0371	1.917E-05
C8+ Heavies	0.0427	110.00	0.0469	0.2394	1.237E-04
Total Gas	100.0001		19.5999		5.166E-02
Total VOC			2.8998		7.643E-03

Gas stream composition obtained from the N Crandell inlet gas streams ('N Crandell' and 'Hampton') extended gas analyses sampled May 2, 2019.

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

Combined Samples - Average Gas Stream Composition

	N Crandell		Hampton		Gas Blend	
Sample Date	5/2/2019		5/2/2019			
Component	mol%	Gas Fraction	mol%	Gas Fraction	mol%	
Carbon Dioxide	2.4025	0.50	1.1657	0.50	1.7841	1.00
Hydrogen Sulfide	0.0000		0.0000		0.0000	
Nitrogen	0.1519		0.2219		0.1869	
Methane	85.2335		86.4986		85.8661	
Ethane	6.9239		6.9750		6.9495	
Propane	2.8667		2.7538		2.8103	
Isobutane	0.5397		0.5352		0.5375	
n-Butane	0.8220		0.7330		0.7775	
Isopentane	0.2993		0.2826		0.2910	
n-Pentane	0.2170		0.2093		0.2132	
Cyclopentane	0.0119		0.0131		0.0125	
n-Hexane, C6	0.0885		0.0977		0.0931	
Cyclohexane	0.0345		0.0334		0.0340	
Other Hexanes	0.1966		0.2127		0.2047	
Heptanes	0.0703		0.0848		0.0776	
Methylcyclohexane	0.0655		0.0754		0.0705	
2,2,4 Trimethylpentane	0.0037		0.0049		0.0043	
Benzene, C6	0.0134		0.0135		0.0135	
Toluene, C7	0.0202		0.0286		0.0244	
Ethylbenzene, C8	0.0003		0.0006		0.0005	
Xylenes, C8	0.0043		0.0094		0.0069	
C8+ Heavies	0.0343		0.0510		0.0427	
Subtotal	100.000		100.000		100.000	



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

Analysis No: HM190032
Cust No: 33700-10245

Well/Lease Information

Customer Name: HARVEST MIDSTREAM
Well Name: N CRANDELL
County/State: SAN JUAN NM
Location:
Lease/PA/CA:
Formation:
Cust. Stn. No.:

Source: N/A
Well Flowing: Y
Pressure: 43 PSIG
Flow Temp: 51 DEG. F
Ambient Temp: 62 DEG. F
Flow Rate: MCF/D
Sample Method:
Sample Date: 05/02/2019
Sample Time: 3.00 PM
Sampled By: JACK SLAVIL
Sampled by (CO): HARVEST MID

Heat Trace: N
Remarks: Calculated Molecular Weight = 19.8104

Analysis

Component:	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.1519	0.1511	0.0170	0.00	0.0015
CO2	2.4025	2.3893	0.4110	0.00	0.0365
Methane	85.2335	84.7660	14.4890	860.86	0.4721
Ethane	6.9239	6.8859	1.8570	122.53	0.0719
Propane	2.8667	2.8510	0.7920	72.13	0.0436
Iso-Butane	0.5397	0.5367	0.1770	17.55	0.0108
N-Butane	0.8184	0.8139	0.2590	26.70	0.0164
Neopentane 2,2 dmc3	0.0036	0.0036	0.0010	0.14	0.0001
I-Pentane	0.2993	0.2977	0.1100	11.98	0.0075
N-Pentane	0.2170	0.2158	0.0790	8.70	0.0054
Neohexane	0.0096	N/R	0.0040	0.45	0.0003
2-3-Dimethylbutane	0.0115	N/R	0.0050	0.55	0.0003
Cyclopentane	0.0119	N/R	0.0040	0.45	0.0003
2-Methylpentane	0.0772	N/R	0.0320	3.66	0.0023
3-Methylpentane	0.0325	N/R	0.0130	1.54	0.0010
C6	0.0885	0.5405	0.0360	4.21	0.0026
Methylcyclopentane	0.0658	N/R	0.0230	2.96	0.0019
Benzene	0.0134	N/R	0.0040	0.50	0.0004
Cyclohexane	0.0345	N/R	0.0120	1.55	0.0010
2-Methylhexane	0.0136	N/R	0.0060	0.74	0.0005
3-Methylhexane	0.0143	N/R	0.0070	0.78	0.0005
2-2-4-Trimethylpentane	0.0037	N/R	0.0020	0.23	0.0001
i-heptanes	0.0090	N/R	0.0040	0.48	0.0003
Heptane	0.0334	N/R	0.0150	1.84	0.0012

Methylcyclohexane	0.0655	N/R	0.0260	3.42	0.0022
Toluene	0.0202	N/R	0.0070	0.90	0.0006
2-Methylheptane	0.0107	N/R	0.0060	0.66	0.0004
4-Methylheptane	0.0053	N/R	0.0030	0.33	0.0002
i-Octanes	0.0051	N/R	0.0020	0.31	0.0002
Octane	0.0102	N/R	0.0050	0.64	0.0004
Ethylbenzene	0.0003	N/R	0.0000	0.02	0.0000
m, p Xylene	0.0040	N/R	0.0020	0.21	0.0001
o Xylene (& 2,2,4 tmc7)	0.0003	N/R	0.0000	0.02	0.0000
i-C9	0.0009	N/R	0.0000	0.06	0.0000
C9	0.0012	N/R	0.0010	0.08	0.0001
i-C10	0.0004	N/R	0.0000	0.03	0.0000
C10	0.0005	N/R	0.0000	0.04	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	99.451	18.411	1147.23	0.6829

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z):	1.003	CYLINDER #:	09
BTU/CU.FT IDEAL:	1149.9	CYLINDER PRESSURE:	44 PSIG
BTU/CU.FT (DRY) CORRECTED FOR (1/Z):	1153.3	ANALYSIS DATE:	05/07/2019
BTU/CU.FT (WET) CORRECTED FOR (1/Z):	1133.2	ANALYSIS TIME:	11:00:03 AM
DRY BTU @ 15.025:	1176.4	ANALYSIS RUN BY:	PATRICIA KING
REAL SPECIFIC GRAVITY:	0.6847		

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: 05/08/2019

GC Method: C12+BTEX Gas



HARVEST MIDSTREAM
WELL ANALYSIS COMPARISON

Lease: N CRANDELL

N/A

05/08/2019

Stn. No.:

33700-10245

Mtr. No.:

Smpl Date:	05/02/2019
Test Date:	05/07/2019
Run No:	HM190032
Nitrogen:	0.1519
CO2:	2.4025
Methane:	85.2335
Ethane:	6.9239
Propane:	2.8667
I-Butane:	0.5397
N-Butane:	0.8184
2,2 dmc3:	0.0036
I-Pentane:	0.2993
N-Pentane:	0.2170
Neohexane:	0.0096
2-3-	0.0115
Cyclopentane:	0.0119
2-Methylpentane:	0.0772
3-Methylpentane:	0.0325
C6:	0.0885
Methylcyclopentane:	0.0658
Benzene:	0.0134
Cyclohexane:	0.0345
2-Methylhexane:	0.0136
3-Methylhexane:	0.0000
2-2-4-	0.0037
i-heptanes:	0.0090
Heptane:	0.0334
Methylcyclohexane:	0.0655
Toluene:	0.0202
2-Methylheptane:	0.0107
4-Methylheptane:	0.0053
i-Octanes:	0.0051
Octane:	0.0102
Ethylbenzene:	0.0003
m, p Xylene:	0.0040
o Xylene (& 2,2,4	0.0003
i-C9:	0.0009
C9:	0.0012
i-C10:	0.0004
C10:	0.0005
i-C11:	0.0000
C11:	0.0000
C12P:	0.0000
BTU:	1153.3
GPM:	18.4340
SPG:	0.6847

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

44 #



C6+ C9+ C12+ BTEX Helium

N2 Flowback Sulfurs Ext. Liquid

Other _____ Date 5-2-19

Sampled By:(Co.) Harvest Time 3 00 AM PM

Sampled by:(Person) Jack Slavic Well Flowing: Yes No

Company: Harvest Heat Trace: Yes No

Well Name: _____ Flow Pressure (PSIG): 43

Location: N Crandall Flow Temp (°F): 51

County/State: NM San Juan Ambient Temp (°F): 62

Formation: _____ Flow Rate (MCF/D): _____

Source: Meter Run Tubing Casing Bradenhead Other _____

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

Meter Number: _____ Cylinder Number: 09

Contact: _____

Remarks: 33700-10245 HM 190032



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

Analysis No: HM190033
Cust No: 33700-10250

Well/Lease Information

Customer Name: HARVEST MIDSTREAM
Well Name: HAMPTON
County/State:
Location:
Lease/PA/CA:
Formation:
Cust. Stn. No.:

Source: N/A
Well Flowing: Y
Pressure: 42 PSIG
Flow Temp: 62 DEG. F
Ambient Temp: 61 DEG. F
Flow Rate: MCF/D
Sample Method:
Sample Date: 05/02/2019
Sample Time: 3.00 PM
Sampled By: JACK SLAVIN
Sampled by (CO): HARVEST

Heat Trace: N
Remarks: Calculated Molecular Weight = 19.4649

Analysis

Component:	Mole%:	Unnormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.2219	0.2217	0.0240	0.00	0.0021
CO2	1.1657	1.1646	0.1990	0.00	0.0177
Methane	86.4986	86.4182	14.7040	873.64	0.4791
Ethane	6.9750	6.9685	1.8700	123.44	0.0724
Propane	2.7538	2.7512	0.7610	69.29	0.0419
Iso-Butane	0.5352	0.5347	0.1760	17.40	0.0107
N-Butane	0.7293	0.7286	0.2310	23.79	0.0146
Neopentane 2,2 dmc3	0.0037	0.0037	0.0010	0.15	0.0001
I-Pentane	0.2826	0.2823	0.1040	11.31	0.0070
N-Pentane	0.2093	0.2091	0.0760	8.39	0.0052
Neohexane	0.0099	N/R	0.0040	0.47	0.0003
2-3-Dimethylbutane	0.0126	N/R	0.0050	0.60	0.0004
Cyclopentane	0.0131	N/R	0.0040	0.49	0.0003
2-Methylpentane	0.0849	N/R	0.0350	4.03	0.0025
3-Methylpentane	0.0359	N/R	0.0150	1.71	0.0011
C6	0.0977	0.6244	0.0400	4.65	0.0029
Methylcyclopentane	0.0694	N/R	0.0250	3.12	0.0020
Benzene	0.0135	N/R	0.0040	0.51	0.0004
Cyclohexane	0.0334	N/R	0.0110	1.50	0.0010
2-Methylhexane	0.0160	N/R	0.0070	0.87	0.0006
3-Methylhexane	0.0158	N/R	0.0070	0.86	0.0005
2-2-4-Trimethylpentane	0.0049	N/R	0.0030	0.30	0.0002
i-heptanes	0.0105	N/R	0.0050	0.56	0.0004
Heptane	0.0425	N/R	0.0200	2.34	0.0015

Methylcyclohexane	0.0754	N/R	0.0300	3.93	0.0026
Toluene	0.0286	N/R	0.0100	1.28	0.0009
2-Methylheptane	0.0155	N/R	0.0080	0.96	0.0006
4-Methylheptane	0.0081	N/R	0.0040	0.50	0.0003
i-Octanes	0.0065	N/R	0.0030	0.39	0.0003
Octane	0.0172	N/R	0.0090	1.07	0.0007
Ethylbenzene	0.0006	N/R	0.0000	0.03	0.0000
m, p Xylene	0.0088	N/R	0.0030	0.45	0.0003
o Xylene (& 2,2,4 tmc7)	0.0006	N/R	0.0000	0.03	0.0000
i-C9	0.0010	N/R	0.0010	0.07	0.0000
C9	0.0021	N/R	0.0010	0.15	0.0001
i-C10	0.0002	N/R	0.0000	0.01	0.0000
C10	0.0004	N/R	0.0000	0.03	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	99.907	18.400	1158.31	0.6709

* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

**@ 14.730 PSIA & 60 DEG. F.

COMPRESSIBILITY FACTOR (1/Z): 1.003
 BTU/CU.FT IDEAL: 1161.0
 BTU/CU.FT (DRY) CORRECTED FOR (1/Z): 1164.5
 BTU/CU.FT (WET) CORRECTED FOR (1/Z): 1144.2
 DRY BTU @ 15.025: 1187.8
 REAL SPECIFIC GRAVITY: 0.6726

CYLINDER #: 04
 CYLINDER PRESSURE: 41 PSIG
 ANALYSIS DATE: 05/07/2019
 ANALYSIS TIME: 12:41:48 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: 05/08/2019

GC Method: C12+BTEX Gas



HARVEST MIDSTREAM
WELL ANALYSIS COMPARISON

Lease: HAMPTON

N/A

05/08/2019

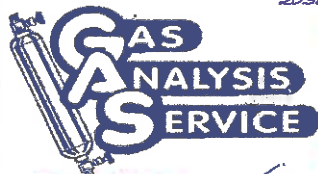
Stn. No.:

33700-10250

Mtr. No.:

Smpl Date:	05/02/2019
Test Date:	05/07/2019
Run No:	HM190033
Nitrogen:	0.2219
CO2:	1.1657
Methane:	86.4986
Ethane:	6.9750
Propane:	2.7538
I-Butane:	0.5352
N-Butane:	0.7293
2,2 dmc3:	0.0037
I-Pentane:	0.2826
N-Pentane:	0.2093
Neohexane:	0.0099
2-3-	0.0126
Cyclopentane:	0.0131
2-Methylpentane:	0.0849
3-Methylpentane:	0.0359
C6:	0.0977
Methylcyclopentane:	0.0694
Benzene:	0.0135
Cyclohexane:	0.0334
2-Methylhexane:	0.0160
3-Methylhexane:	0.0000
2-2-4-	0.0049
i-heptanes:	0.0105
Heptane:	0.0425
Methylcyclohexane:	0.0754
Toluene:	0.0286
2-Methylheptane:	0.0155
4-Methylheptane:	0.0081
i-Octanes:	0.0065
Octane:	0.0172
Ethylbenzene:	0.0006
m, p Xylene:	0.0088
o Xylene (& 2,2,4	0.0006
i-C9:	0.0010
C9:	0.0021
i-C10:	0.0002
C10:	0.0004
i-C11:	0.0000
C11:	0.0000
C12P:	0.0000
BTU:	1164.5
GPM:	18.4240
SPG:	0.6726

70#



**** 10 PSIG Precharge ****

C6+ C9+ C12+ C12+ BTEX Helium

Other _____ Date 5/22/18 AM PM

Sampled By: (Co.) Sisto Sandoval Time 1:00

Sampled by: (Person) _____ Well Flowing: Yes No

Company: Williams Heat Trace: Yes No

Well Name: _____ Flow Pressure (PSIG): 60

Location: Hampton Flow Temp (°F): 65

County/State: _____ Ambient Temp (°F): 75

Formation: _____ Flow Rate (MCF/D): _____

Source: Meter Run Tubing Casing Bradenhead Other _____

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

Meter Number: _____ Cylinder Number: # 07

Contact: _____

Remarks: _____

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

^aWater/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.

^bThese 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.

^cThe "other" equipment type was derived from compressors, diaphragms, 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.

TANKS 4.09d Condensate Liquid Input

NORMALIZED NORTH CRANDELL COMPRESSOR STATION STORED CONDENSATE LIQUID SPECIATION PROFILE

Component	Mole Fraction	Component MW	Component Weight, lb/lb-mole (Mol fraction x MW)	Weight (Wt.) Fraction (lb/lb-mol / Total Liquid lb/lb-mol)	<u>NORMALIZED TANKS 4.0.9d SPECIATION INPUT</u>		<u>TANKS Input</u>
					Wt%	Normalization method	<u>Wt. %</u>
CO2	3.48E-04	44.01	0.0153	1.51E-04	-		-
N2	1.78E-04	28.01	4.99E-03	4.91E-05	-		-
C1	1.71E-03	16.04	0.0274	0.0003	-		-
C2	2.33E-03	30.07	0.0701	0.0007	-		-
C3	1.18E-02	44.09	0.5193	0.0051	-		-
IC4	9.80E-03	58.12	0.5697	0.0056	0.8739	$= ((i\text{-Butane (IC4) Wt. fraction}) + (\text{Sum of CO2, N2, C1, C2, C3 Wt. fractions}) / 2)) \times 100$	2.7949
NC4	2.81E-02	58.12	1.6340	0.0161	1.9210	$= ((n\text{-Butane (NC4) Wt. fraction}) + (\text{Sum of CO2, N2, C1, C2, C3 Wt. fractions}) / 2)) \times 100$	-
IC5	3.49E-02	72.15	2.5203	0.0248	2.4796		2.4796
NC5	3.52E-02	72.15	2.5420	0.0250	2.5010		2.5010
Hexanes		86.17	0.0000	0.0000	-		-
Heptanes	1.04E-01	100.21	10.4208	0.1025	10.2524		10.2524
Octanes	4.67E-01	114.23	53.3841	0.5252	52.5214		52.5214
Nonanes	0.00E+00	128.20	0.0000	0.0000	0.0000		0.0000
Benzene	1.06E-02	78.11	0.8258	0.0081	0.8125		0.8125
Toluene	3.42E-02	92.14	3.1502	0.0310	3.0993		3.0993
E-Benzene	1.45E-02	106.17	1.5432	0.0152	1.5183		1.5183
Xylenes	3.69E-02	106.16	3.9221	0.0386	3.8587		3.8587
n-C6	7.15E-02	106.16	7.5922	0.0747	7.4695		7.4695
2,2,4-Trimethylpentane	2.74E-03	100.21	0.2749	0.0027	0.2705		0.2705
C10 Plus	0.00E+00	142.29	0.0000	0.0000	0.0000		0.0000
Cyclohexane	3.46E-02	84.16	2.9112	2.86E-02	2.8642		2.8642
Methylcyclohexane	9.89E-02	98.19	9.7149	0.0956	9.5579		9.5579
Cyclopentane	2.11E-04	70.13	0.0148	0.0001	0.0146		0.0146
Total	1.000		101.6	1.0000	100.0000		100.0
Notes:							
Hydrocarbon (HC) liquid stream composition for TANKS 4.09d input is based on the ProMax (Symmetry) analysis "North Crandell Condensate Tank Flash Modeling" output, , /Condensate_Truck_Loading (Material Stream)', 'Equilibrium Results', 'Fraction [Fraction]', column 'Liq0'.							
The ProMax program includes the North Crandell Compressor Station liquid stream sampled 05/11/2020 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)							

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 ($\text{lb}/10^3 \text{ gal}$) 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 ($\text{lb}/\text{lb-mole}$) (see Table 7.1-2)

T = temperature of bulk liquid loaded, $^{\circ}\text{R}$ ($^{\circ}\text{F} + 460$)

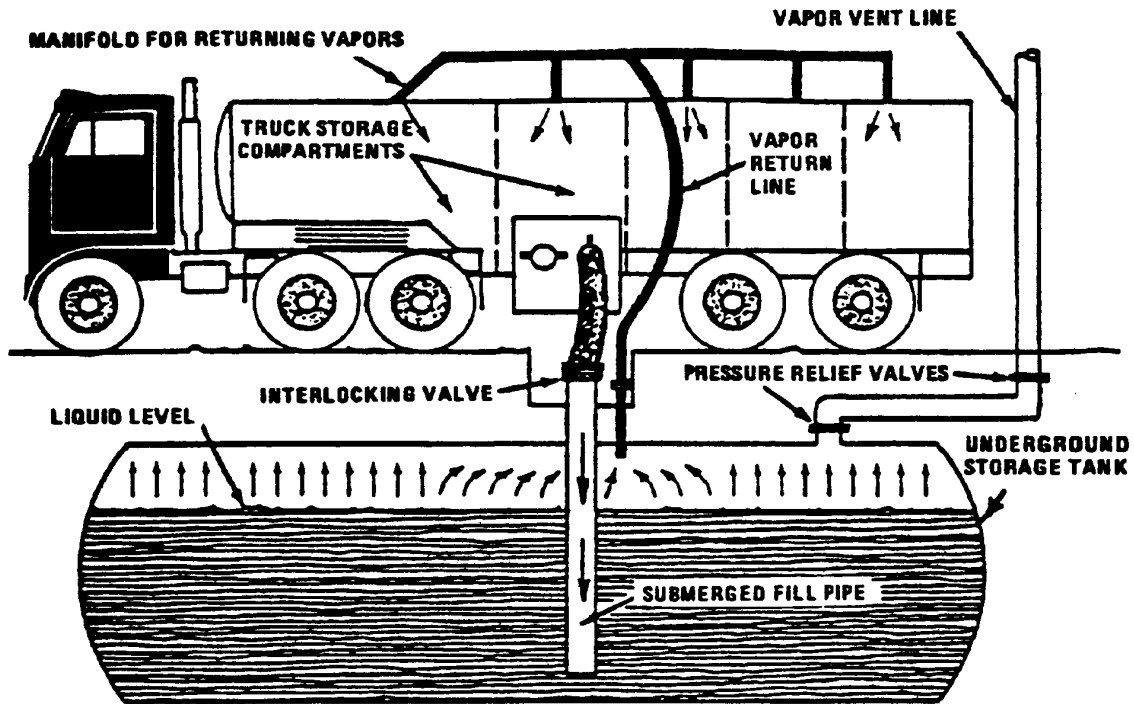


Figure 5.2-5. Tank truck unloading into a service station underground storage tank and practicing "vapor balance" form of emission control.

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
1. DEFINITIONS.....	2
2. AIR POLLUTANT EMISSION NOTICE Q&A.....	4
3. EMISSION FACTORS AND SITE SPECIFIC SAMPLING Q&A	7
4. EMISSION CALCULATIONS Q&A	8
5. CONSTRUCTION PERMIT Q&A	9
6. OIL AND GAS INDUSTRY PRODUCED WATER TANK GP Q & A	10
7. HOUSE BILL 07-1341	12

Document source:

https://www.colorado.gov/pacific/sites/default/files/AP_Memo-09-02-Oil-_-Gas-Produced-Water-Tank-Batteries-Regulatory-Definitions-and-Permitting-Guidance.pdf

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

Document source:

<https://www.tceq.texas.gov/assets/public/implementation/air/am/contracts/reports/ei/5820784005FY1024-20100830-environ-%20EmissionFactorDeterminationForProducedWaterStorageTanks.pdf>

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

American Cleaning Systems, Inc.
PO Box 7252
Odessa, TX 79760
(432)-381-3740

Material Safety Data Sheet

AMERICAN



CLEANING SYSTEMS, INC.

Date entered: 2/2/77
Date revised: 02/01/2009

Emergency Numbers:
Medical: (800)-824-8891
Transportation: (800)-424-9300

Section 1 PRODUCT IDENTIFICATION

(1.) Product Name: **Angry Orange** Product Number: _____
EPA Reg. No: _____
EPA Est. No: _____
(3.) Chemical name/synonyms: n/a (4.) Chemical family: alkaline detergent (5.) Chemical formula: mix-
ture
(6.) NFPA acute hazard rating: Health: 1 Flammability: 0 Reactivity: 0 Preparer's Name: Bill Lyon Phone: (800)-824-8891
HMS
Personal Protective Equipment: Face shield, gloves

Section 2 CHEMICAL COMPOSITION

Note: List all CERCLA hazardous substances at 1% or greater and carcinogens at 0.1% or greater.

(1.) Ingredient:	(2.) SARA Note 313:	(3.) CAS Number:	(4.) % Range	(5.) PEL:	(6.) LD50:	(7.) TLV:
Sodium metasilicate	No	6834-92-0	2.50%	n/a	n/a	2mg/m ³
Alkylphenol ethoxylate	No	9016-45-9	2.0%	n/a	3.31 g/kg	n/a
2-butoxyethanol	Yes	000111-76-2	6.0%	25 ppm TWA	1519 mg/kg	121 ppm

Section 3 PHYSIOLOGICAL EFFECTS

(1.) Primary route(s) of entry into body: _____ (2.) Eyes: _____ (3.) Skin: x (4.) Inhalation: _____ (5.) Ingestion: _____
(6.) Acute effects: _____
(7.) Eyes: tissue irritation, blurred vision
(8.) Skin: tissue irritation, redness
(9.) Inhalation: tissue irritation, shortness of breath
(10.) Ingestion: some irritation, some swelling of the abdomen, nausea
(11.) Chronic effects: not known

Section 4 EMERGENCY AND FIRST AID PROCEDURES

(1.) Eyes: rinse for 15 minutes with potable water, if irritation persists, seek medical attention
(2.) Skin: rinse for 15 minutes with potable water, if irritation persists, seek medical attention
(3.) Inhalation: remove victim to fresh air, if symptoms persist, seek medical attention
(4.) Ingestion: do not induce vomiting, give large amounts of potable water while seeking immediate medical attention

Section 5 FIRE AND EXPLOSION HAZARD DATA

(1.) Flash point: none (2.) Method: TCC (3.) Flammable limits in air: none (4.) Autoignition temperature: not known
(5.) Suitable extinguishing media: water, foam or CO2 (6.) Hazardous combustion byproducts: carbon monox-

Section 6 ENVIRONMENTAL INFORMATION

(1.) Spill or leak procedures:
(2.) Small spill leak: stop leak, neutralize material with mild base, mop or vacuum to disposal container or rinse to sanitary sewer
(3.) Large spill leak: stop leak, neutralize material with mild base, mop or vacuum to disposal container then rinse remainder to sanitary sewer
(4.) Spill reportable quantity: none pounds.
(5.) Waste disposal method: follow local, state and federal guidelines
(6.) EPA appropriate waste classification: none
(7.) RCRA appropriate characteristic waste: no (8.) If so EPA hazardous waste number: n/a
(9.) RCRA appropriate listed waste: No (10.) If so EPA hazardous waste number: n/a
(11.) non RCRA regulated waste: No
(12.) Procedure for handling empty containers: do not reuse. Give container to drum licensed drum reconditioner

- (15.) Is material classified under the CLEAN WATER ACT (USA) or appropriate water regulations as a:
 (16.) Toxic pollutant (section 307): No
 (17.) Hazardous substance (section 311)?: No
 (18.) If yes, reportable quantity (R.Q.): n/a
 (19.) Is material classified under the CLEAN AIR ACT (USA) or appropriate CLEAN AIR regulations as a:
 (20.) Hazardous air pollutant section (12)?: No
 (21.) Comments: biodegradable

Section 7 STORAGE AND HANDLING PRECAUTIONS

- (1.) Storage: store at temperatures below 120° F and above 32° F.
 (2.) Handling: wear chemical resistant gloves, apron, boots and full face shield when handling concentrate
 (3.) Precautionary labeling: none

Section 8 OCCUPATIONAL CONTROL PROCEDURES

- (1.) Ventilation: (2.) local exhaust (3.) general exhaust X (4.) none required
 (5.) Personal protective equipment:
 (6.) Respirator type: none required
 (7.) Gloves: (8.) Natural rubber: (9.) plastic: (10.) nitrile: (11.) neoprene: X (12.) butyl: (13.) other:
 (14.) Eye protection: (15.) glasses with side shield: X (16.) full face shield: (17.) chemical splash goggles: (18.) other:

Section 9 PHYSICAL DATA

- (1.) Appearance: clear orange liquid (3.) Physical state: (4.) solid: (5.) liquid: X (6.) gas:
 (2.) Odor: alcohol type odor (7.) Boiling Point: 212 F (8.) Freeze Point: 32 F
 (9.) Specific Gravity: 1.060 (10.) pH Neat: 13.2 (11.) pH 1%: 12.2 (12.) % Solids: 16.6% (13.) # Volatiles: 83.4%
 (14.) Solubility Water: complete (15.) Vapor pressure: n/a (16.) Vapor density: n/a (17.) Evaporation rate: >1
 (18.) VOC Less Exempt (theoretical): .53 lbs./gal (19.) VOC As Packaged (theoretical): .53 lbs./gal

Section 10 REACTIVITY DATA

- (1.) Thermal stability: Stable
 (2.) Condition to avoid: extreme high heat
 (3.) Hazardous decomposition products:
 (4.) Hazardous polymerization: may occur: will not occur: X
 (6.) Materials to avoid: strong oxidizers, Acids
 (7.) Corrosive action on materials: none

Section 11 TOXICOLOGICAL INFORMATION

- (1.) Summary of health effects:

When atomized, this product may irritate mucus membranes and cause coughing and congestion. This product will defat the skin. Those users that are skin reactive to chemicals should certainly wear gloves to protect the skin.

Section 12 SHIPPING REQUIREMENTS

- (1.) Indicate country/regulatory agency which specifies requirements: USA-DOT
 (2.) Proper Shipping name:
Compound, Cleaning, Liquid, NOIBN, Item Name: Angry Orange, Item Number:
 (3.) Hazardous class: n/a (4.) Identification number: n/a (5.) Packaging group: n/a (6.) Emergency response guide number: n/a
 (7.) Labels required: none
 (8.) Other requirements: none
 (9.) Note: none

Product Name: Angry Orange

Product Number:

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 ₂ O	^a 298
HFC-23	75-46-7	CHF ₃	^a 14,800
HFC-32	75-10-5	CH ₂ F ₂	^a 675
HFC-41	593-53-3	CH ₃ F	^a 92
HFC-125	354-33-6	C ₂ HF ₅	^a 3,500
HFC-134	359-35-3	C ₂ H ₂ F ₄	^a 1,100
HFC-134a	811-97-2	CH ₂ FCF ₃	^a 1,430
HFC-143	430-66-0	C ₂ H ₃ F ₃	^a 353
HFC-143a	420-46-2	C ₂ H ₃ F ₃	^a 4,470
HFC-152	624-72-6	CH ₂ FCH ₂ F	53
HFC-152a	75-37-6	CH ₃ CHF ₂	^a 124
HFC-161	353-36-6	CH ₃ CH ₂ F	12
HFC-227ea	431-89-0	C ₃ HF ₇	^a 3,220
HFC-236cb	677-56-5	CH ₂ FCF ₂ CF ₃	1,340
HFC-236ea	431-63-0	CHF ₂ CHF ₂ CF ₃	1,370
HFC-236fa	690-39-1	C ₃ H ₂ F ₆	^a 9,810
HFC-245ca	679-86-7	C ₃ H ₃ F ₅	^a 693
HFC-245fa	460-73-1	CHF ₂ CH ₂ CF ₃	1,030
HFC-365mfc	406-58-6	CH ₃ CF ₂ CH ₂ CF ₃	794
HFC-43-10mee	138495-42-8	CF ₃ CFHCFHCF ₂ CF ₃	^a 1,640
Sulfur hexafluoride	2551-62-4	SF ₆	^a 22,800
Trifluoromethyl sulphur pentafluoride	373-80-8	SF ₅ CF 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 ₂ F ₆	^a 12,200
PFC-218 (Perfluoropropane)	76-19-7	C ₃ F ₈	^a 8,830

Name	CAS No.	Chemical formula	Global warming potential (100 yr.)
Perfluorocyclopropane	931-91-9	C-C ₃ F ₆	17,340
PFC-3-1-10 (Perfluorobutane)	355-25-9	C ₄ F ₁₀	^a 8,860
Perfluorocyclobutane	115-25-3	C-C ₄ F ₈	^a 10,300
PFC-4-1-12 (Perfluoropentane)	678-26-2	C ₅ F ₁₂	^a 9,160
PFC-5-1-14 (Perfluorohexane)	355-42-0	C ₆ F ₁₄	^a 9,300
PFC-9-1-18	306-94-5	C ₁₀ F ₁₈	7,500
HCFE-235da2 (Isoflurane)	26675-46-7	CHF ₂ OCHClCF ₃	350
HFE-43-10pccc (H-Galden 1040x)	E1730133	CHF ₂ OCF ₂ OC ₂ F ₄ OCHF ₂	1,870
HFE-125	3822-68-2	CHF ₂ OCF ₃	14,900
HFE-134	1691-17-4	CHF ₂ OCHF ₂	6,320
HFE-143a	421-14-7	CH ₃ OCF ₃	756
HFE-227ea	2356-62-9	CF ₃ CHFOCF ₃	1,540
HFE-236ca12 (HG-10)	78522-47-1	CHF ₂ OCF ₂ OCHF ₂	2,800
HFE-236ea2 (Desflurane)	57041-67-5	CHF ₂ OCHF ₂ CF ₃	989
HFE-236fa	20193-67-3	CF ₃ CH ₂ OCF ₃	487
HFE-245cb2	22410-44-2	CH ₃ OCF ₂ CF ₃	708
HFE-245fa1	84011-15-4	CHF ₂ CH ₂ OCF ₃	286
HFE-245fa2	1885-48-9	CHF ₂ OCH ₂ CF ₃	659
HFE-254cb2	425-88-7	CH ₃ OCF ₂ CHF ₂	359
HFE-263fb2	460-43-5	CF ₃ CH ₂ OCH ₃	11
HFE-329mcc2	67490-36-2	CF ₃ CF ₂ OCF ₂ CHF ₂	919
HFE-338mcf2	156053-88-2	CF ₃ CF ₂ OCH ₂ CF ₃	552
HFE-338pcc13 (HG-01)	188690-78-0	CHF ₂ OCF ₂ CF ₂ OCHF ₂	1,500
HFE-347mcc3	28523-86-6	CH ₃ OCF ₂ CF ₂ CF ₃	575
HFE-347mcf2	E1730135	CF ₃ CF ₂ OCH ₂ CHF ₂	374
HFE-347pcf2	406-78-0	CHF ₂ CF ₂ OCH ₂ CF ₃	580
HFE-356mec3	382-34-3	CH ₃ OCF ₂ CHF ₂ CF ₃	101
HFE-356pcc3	160620-20-2	CH ₃ OCF ₂ CF ₂ CHF ₂	110
HFE-356pcf2	E1730137	CHF ₂ CH ₂ OCF ₂ CHF ₂	265
HFE-356pcf3	35042-99-0	CHF ₂ OCH ₂ CF ₂ CHF ₂	502

Name	CAS No.	Chemical formula	Global warming potential (100 yr.)
HFE-365mcf3	378-16-5	CF ₃ CF ₂ CH ₂ OCH ₃	11
HFE-374pc2	512-51-6	CH ₃ CH ₂ OCF ₂ CHF ₂	557
HFE-449sl (HFE-7100) Chemical blend	163702-07-6 163702-08-7	C ₄ F ₉ OCH ₃ (CF ₃) ₂ CFCF ₂ OCH ₃	297
HFE-569sf2 (HFE-7200) Chemical blend	163702-05-4 163702-06-5	C ₄ F ₉ OC ₂ H ₅ (CF ₃) ₂ CFCF ₂ OC ₂ H ₅	59
Sevoflurane	28523-86-6	CH ₂ FOCH(CF ₃) ₂	345
HFE-356mm1	13171-18-1	(CF ₃) ₂ CHOCH ₃	27
HFE-338mmz1	26103-08-2	CHF ₂ OCH(CF ₃) ₂	380
(Octafluorotetramethylene)hydroxymethyl group	NA	X-(CF ₂) ₄ CH(OH)-X	73
HFE-347mmy1	22052-84-2	CH ₃ OCF(CF ₃) ₂	343
Bis(trifluoromethyl)-methanol	920-66-1	(CF ₃) ₂ CHOH	195
2,2,3,3,3-pentafluoropropanol	422-05-9	CF ₃ CF ₂ CH ₂ OH	42
PFPPIE	NA	CF ₃ OCF(CF ₃)CF ₂ OCF ₂ O CF 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 CO₂ Emission Factors and High Heat Values for Various Types of Fuel

Table C–1 to Subpart C—Default CO₂ Emission Factors and High Heat Values for Various Types of Fuel

Fuel type	Default high heat value	Default CO₂ emission factor
Coal and coke	mmBtu/short ton	kg CO₂/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 CO₂/mmBtu
(Weighted U.S. Average)	1.026 × 10 ⁻³	53.06
Petroleum products	mmBtu/gallon	kg CO₂/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 CO₂/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 CO₂/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 CO₂/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 CO₂/mmBtu
Landfill Gas	0.485 × 10 ⁻³	52.07
Other Biomass Gases	0.655 × 10 ⁻³	52.07
Biomass Fuels—Liquid	mmBtu/gallon	kg CO₂/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)

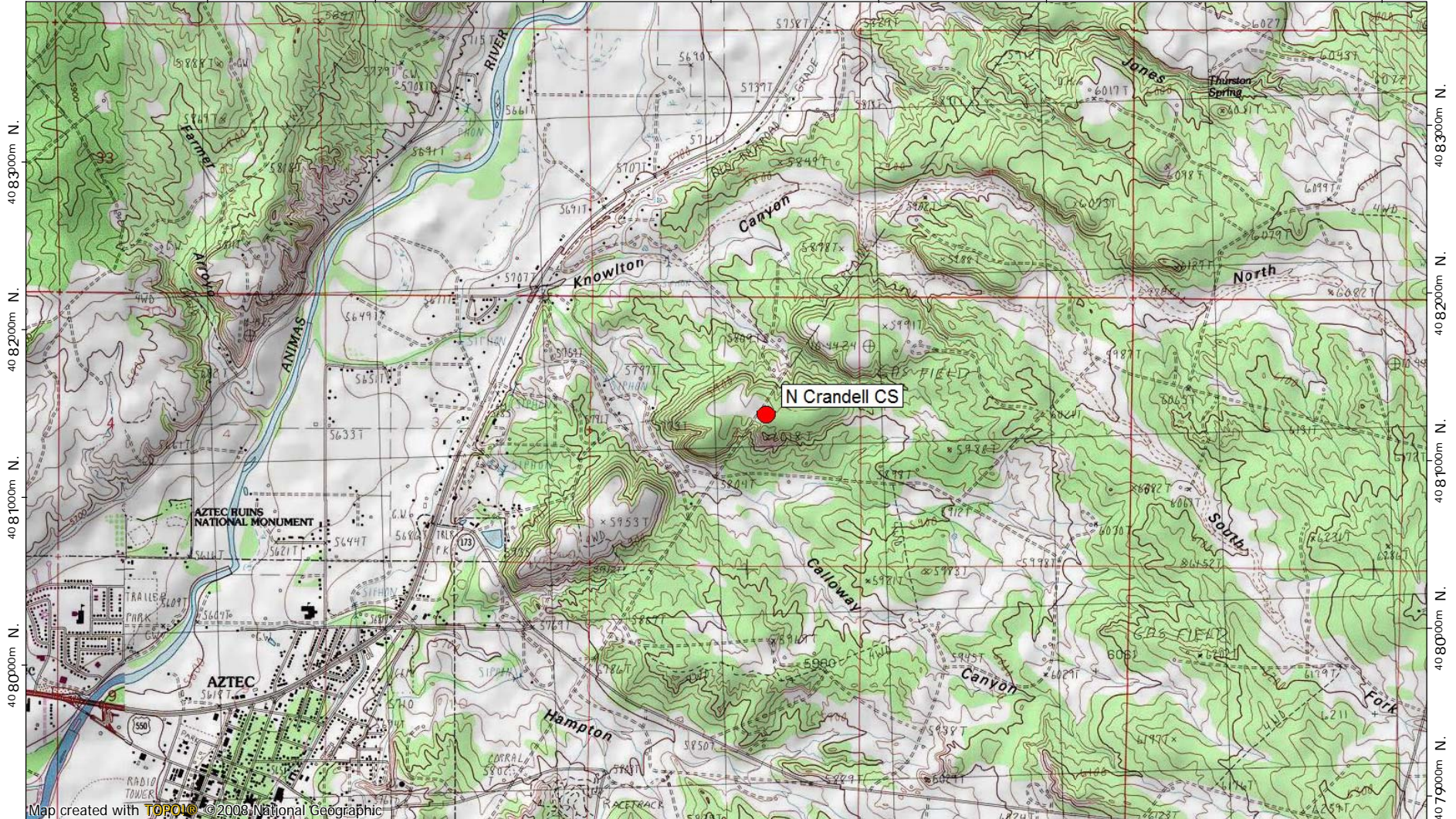
A map such as a 7.5 minute topographic quadrangle showing the exact location of the source. The map shall also include the following:

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).

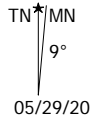
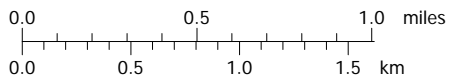
HARVEST FOUR CORNERS, LLC - NORTH CRANDELL COMPRESSOR STATION - San Juan County, NM T 30 N, R 11 W, Section 2

233000m E. 234000m E. 235000m E. 236000m E. 237000m E. 238000m E. WGS84 Zone 13S 240000m E.



Map created with **TOPOLIC** ©2008 National Geographic

WGS84 Zone 12S 767000m E. 234000m E. 235000m E. 236000m E. 237000m E. 238000m E. WGS84 Zone 13S 240000m E.



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.

San Juan County is classified as an “A” 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)(a) NMAC, public notice must be provided by certified mail to the owners of record within one hundred (100) feet of the property on which the facility is located.

Table 1 identifies the land owners within 100 feet of the property on which N Crandell is located, that received public notice letters of the proposed permit modification. Land owner information was obtained

from the San Juan County Assessor’s Office online parcel mapping viewer at <https://webmaps.sjcounty.net/portal/apps/webappviewer/index.html?id=e970ec2c29e74b37b8440dfe364c3dbf>. Please see the attached map(s) with property owner listings. (Note the distance scale on the lower left portion of the County Assessor’s office graphics.)

Table 1

Land Owners Receiving Public Notice Letters Within 100 Feet of the Property on Which the N Crandell Compressor Station is Located	
State of New Mexico	Federal Bureau of Land Management (BLM)
Anacapa, Inc.	Robison, Earl F et al
Jones, Monte L	Armenta, Shannette et al
Van Ausall, Jeanie / Attn : Brittian Steven	Garcia, Pablo and Terri
Frendreis, Jean T	Divine, Jeremy and Teddi
Townsend, Mary Alice and Wayne R	

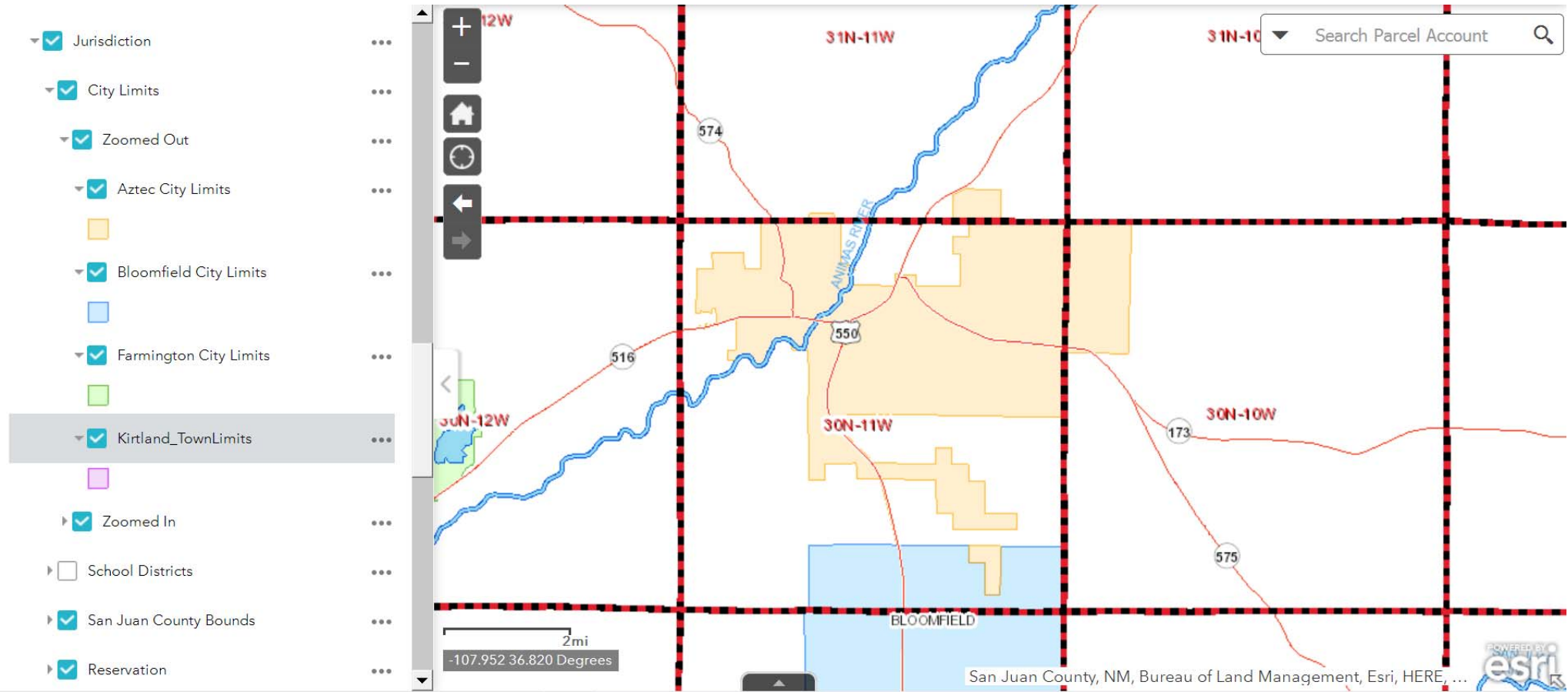
20.2.72.203.B(2) NMAC requires public notice be provided by certified mail to all municipalities, counties in which the facility is located, and to municipalities, counties and Indian Tribes within a 10 mile radius of the property on which the facility is located.

Table 2 identifies the counties, municipalities and tribes located within ten miles of N Crandell that received public notice letters.

Table 2

Municipalities, Counties and Tribes Within 10 Miles of the N Crandell Compressor Station Receiving Public Notice Letters	
Municipalities	Addressed to
City of Aztec	City Clerk
City of Bloomfield	City Clerk
City of Farmington	City Clerk
Counties	Addressed to
San Juan County	County Clerk
Tribes	Addressed to
None	--

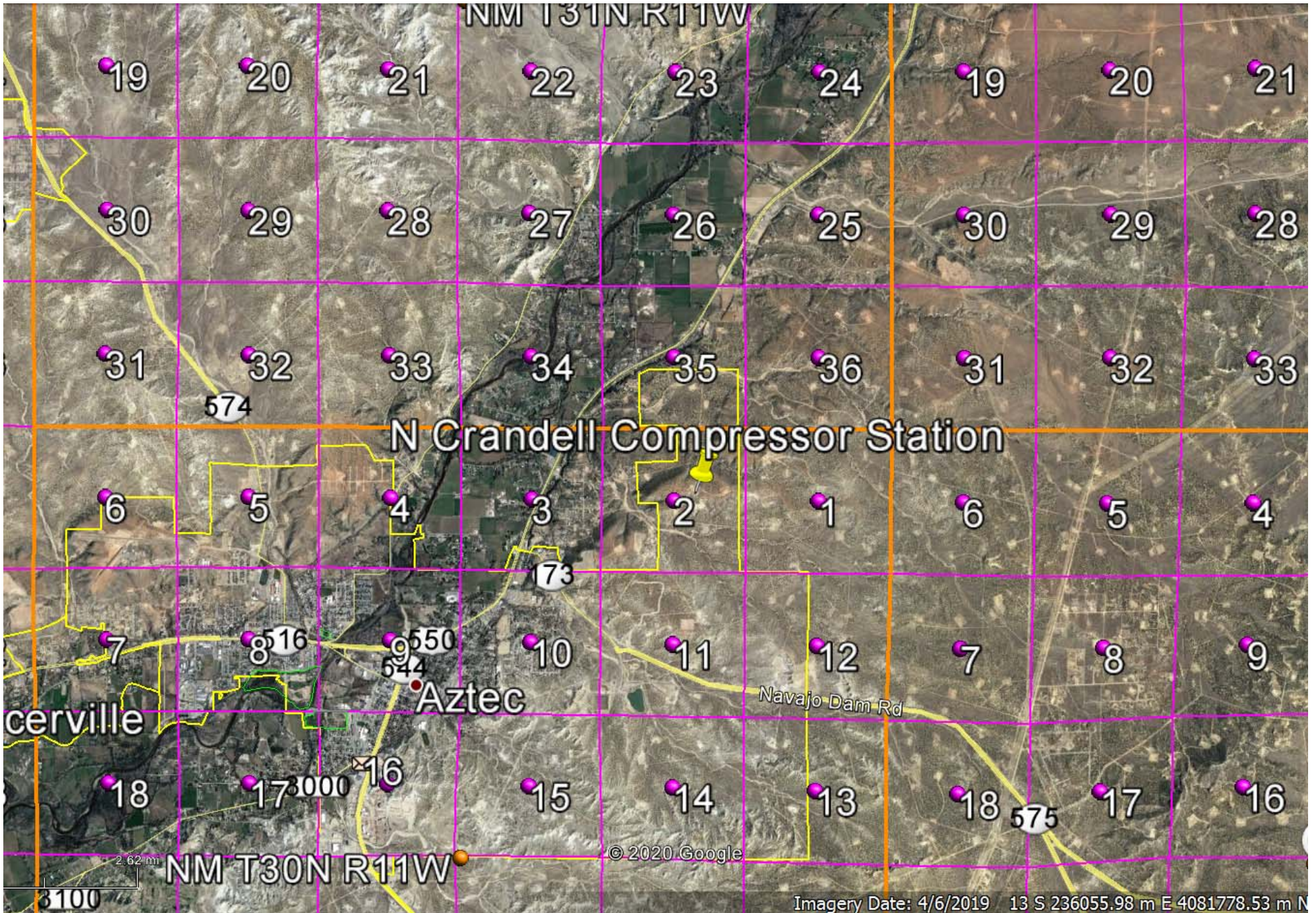
San Juan County, New Mexico
County Assessor's Office –



North Crandell Compressor Station

Aztec, San Juan County, New Mexico

Township 30N, Range 11W, Section 02



N Crandell Compressor Station

2

Rd 2952

Rd 2945

Rd 2951

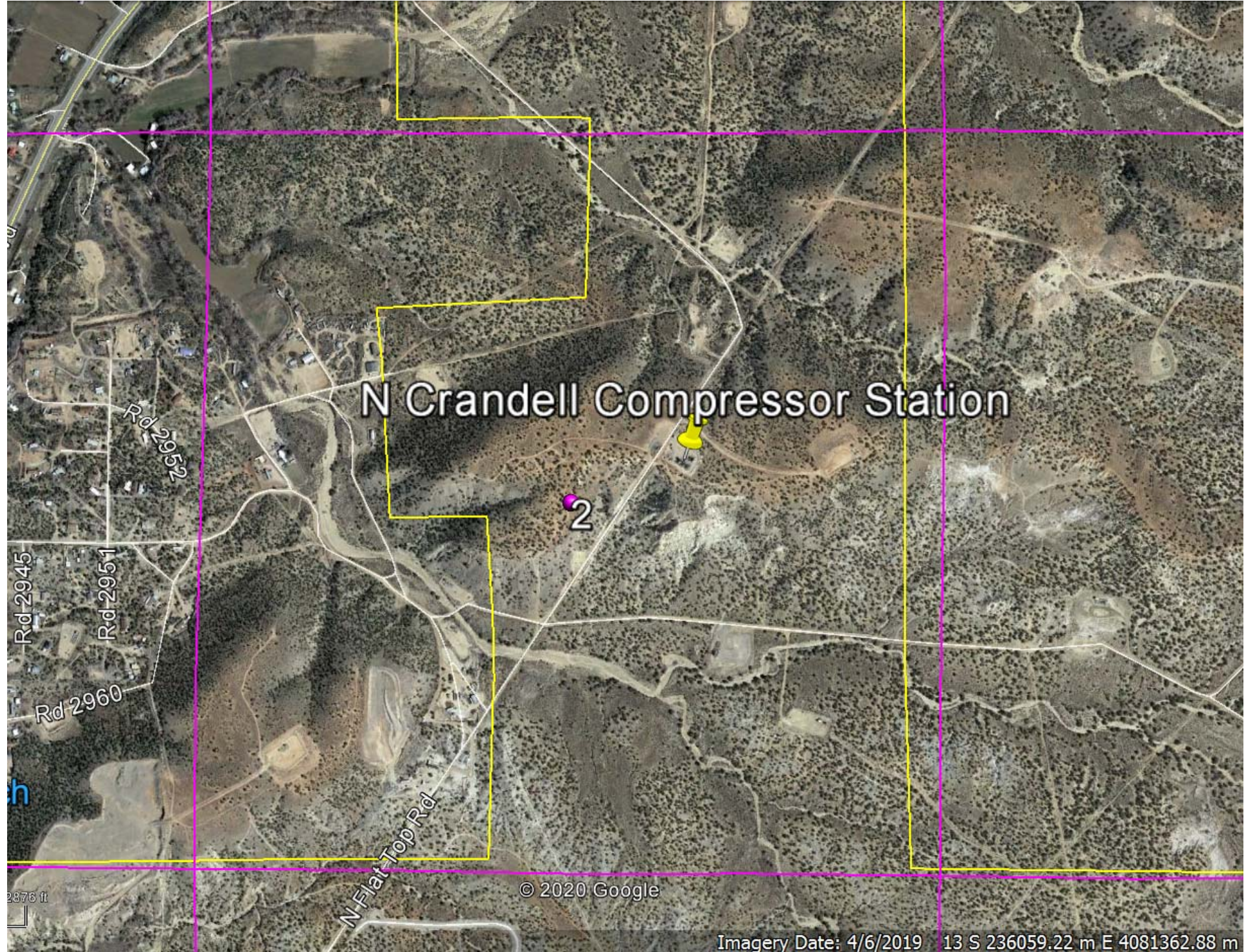
Rd 2960

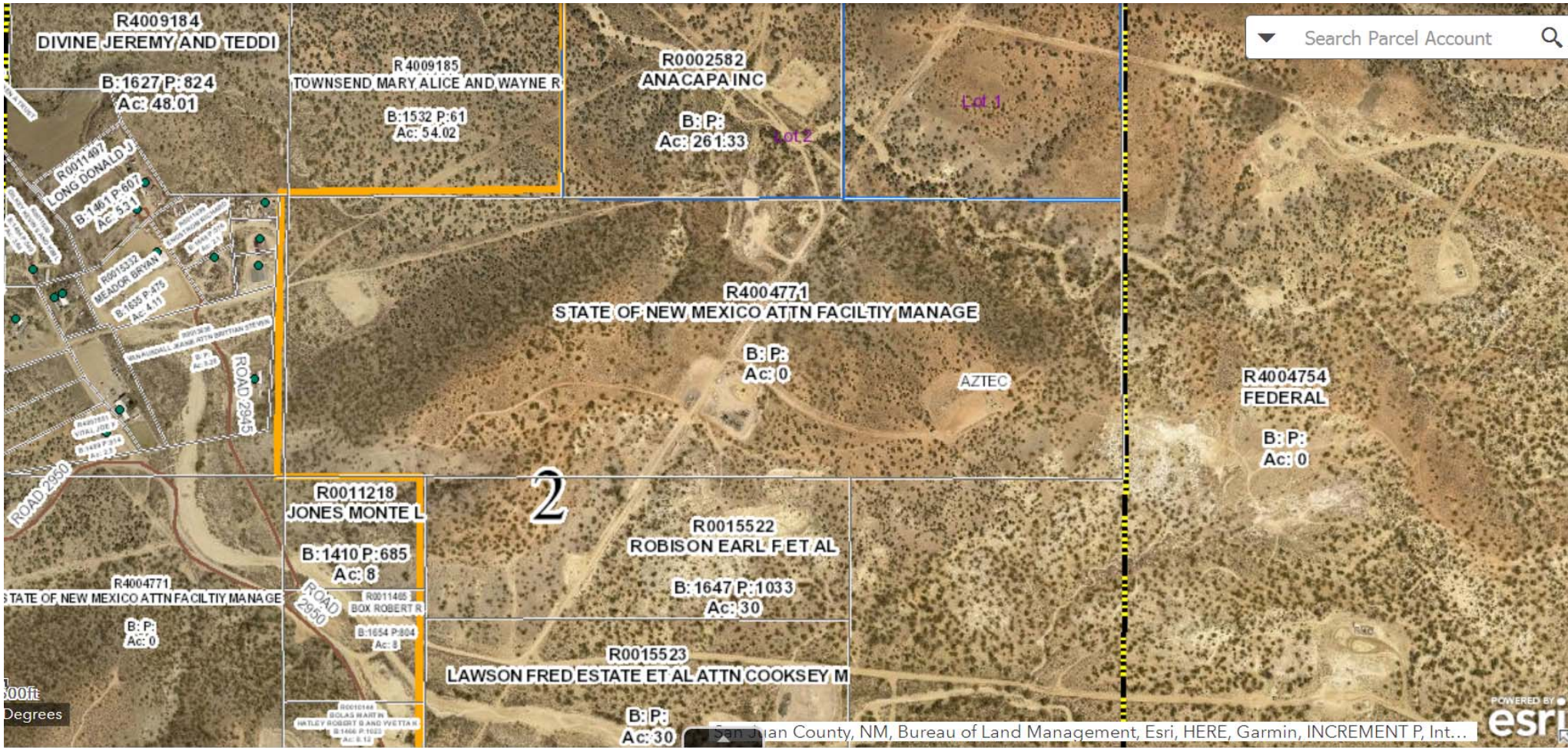
N Flat Top Rd

© 2020 Google

Imagery Date: 4/6/2019 13 S 236059.22 m E 4081362.88 m

2876 ft







AZTEC

R400477.1
STATE OF NEW MEXICO ATTN FACILTIY MANAGE

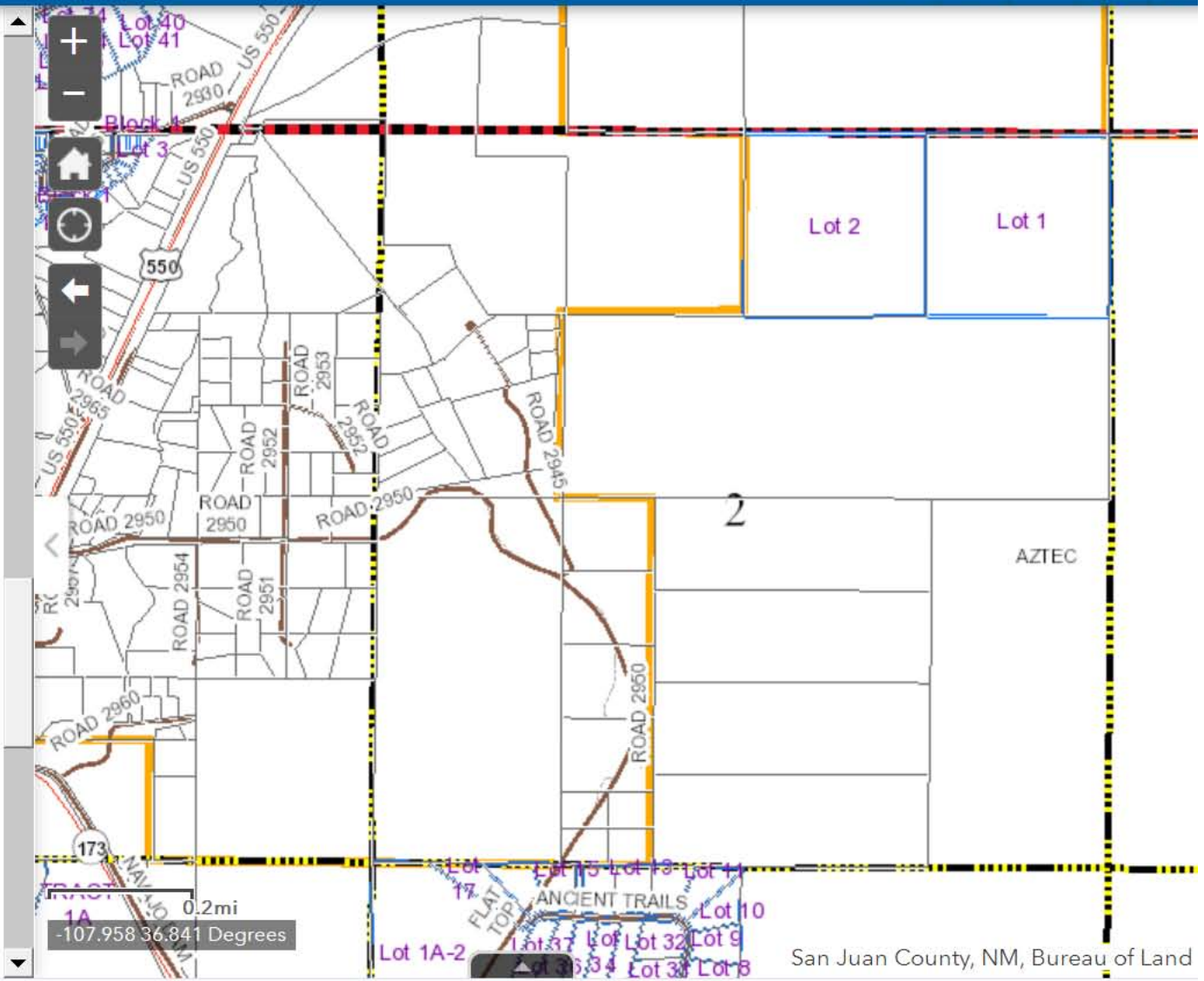
B: P:
Ac: 0

100ft

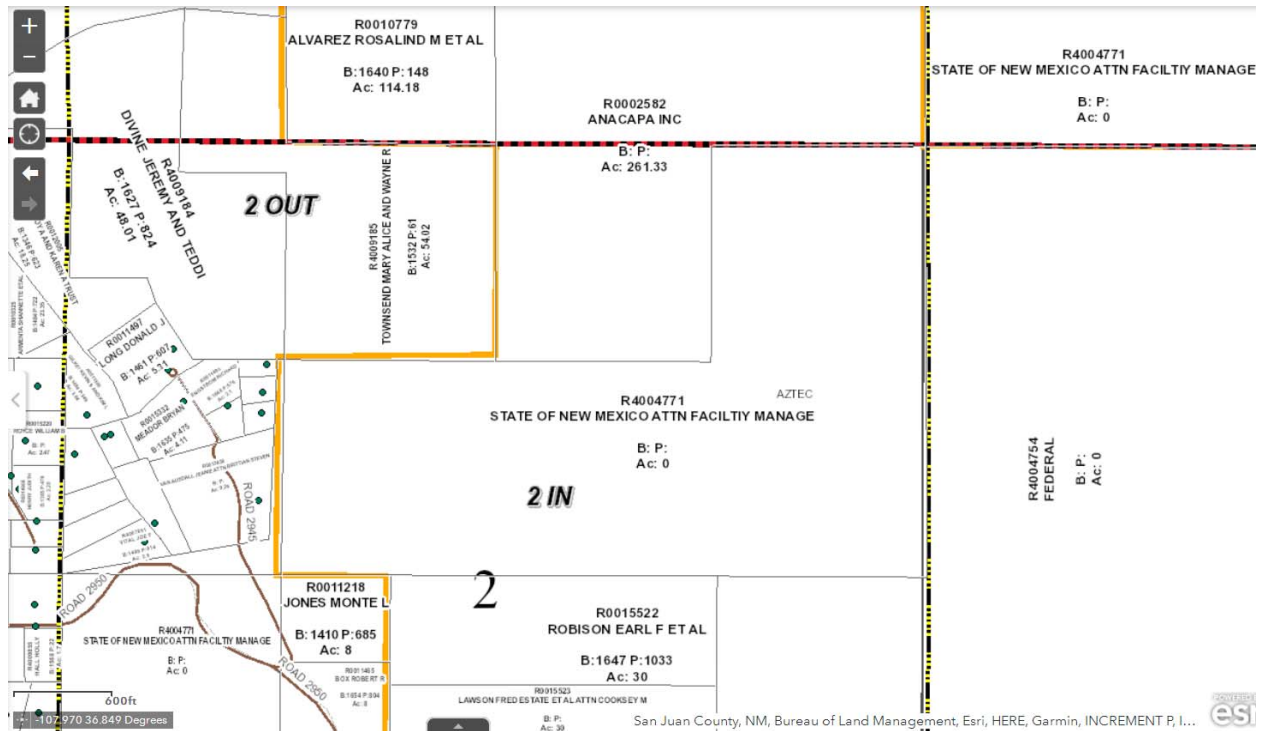
-107.957 36.842 Degrees



- Zoomed In
- Aztec City Limits
- Bloomfield City Limits
- Farmington City Limits
- Kirtland_TownLimits
- School Districts
- San Juan County Bounds
- Reservation
- San Juan County Bounds
- RegionalCounties
- RegionalStates

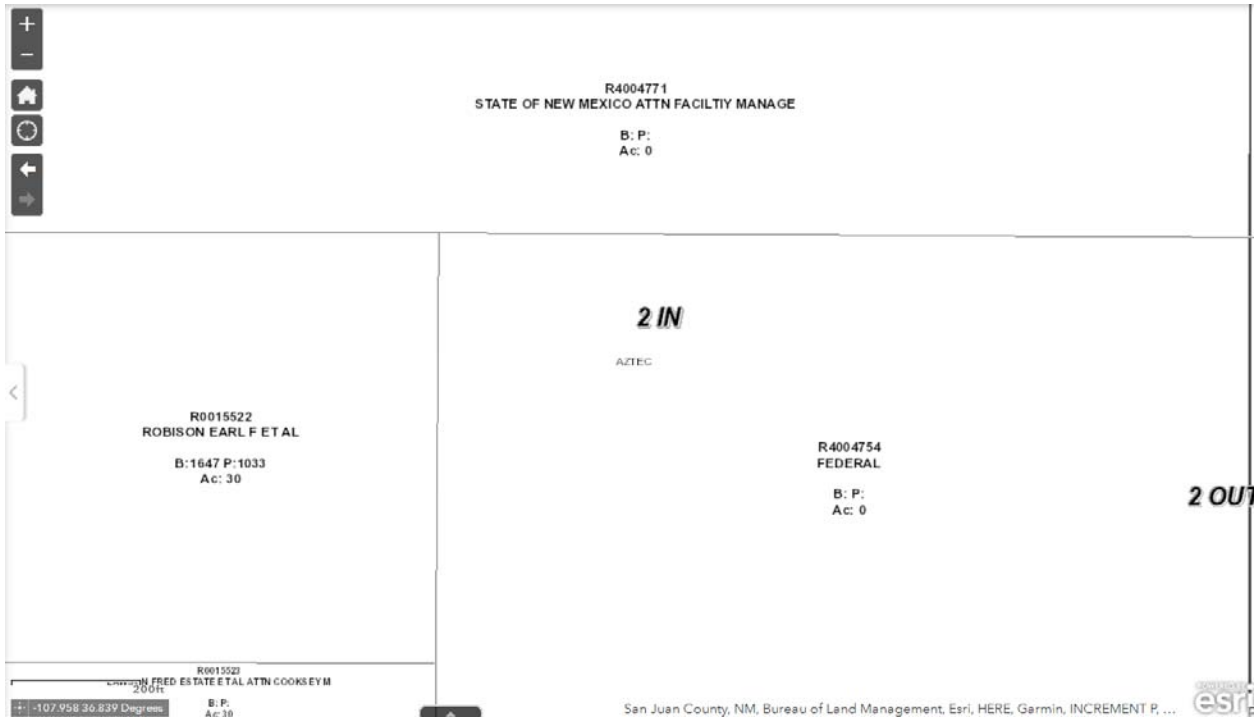


The **Harvest Four Corners, LLC --North Crandell Compressor Station** is located in Aztec, New Mexico, within Township 30N, Range 11W, Section 02, on property owned by the State of New Mexico, parcel R4004771: (<https://webmaps.sicounty.net/portal/apps/webappviewer/index.html?id=e970ec2c29e74b37b8440dfe364c3dbf>)



Parcel

OBJECTID	32415
PARCELNO	208818888888
ShapeArea	273,813,191.88
Shape	
OBJECTID	43,276
ACCOUNTNO	R4004771
PARCELNB	208818888888
NAME1	STATE OF NEW MEXICO ATTN FACILITY MANAGE
NAME2	
ADDRESS	PO BOX 6850
CITYSTATEZIP	SANTA FE, NM 87502
RECEPTNO	
BOOK	
PAGE	
GrossAcres	0.00
SUBNO	
SUBNAME	
LOT	
BLOCK	
TRACT	
ReviewFlag	0
LEGAL1	
LEGAL2	
AssessorsLink	More info
LocationAddress	US 64
LocationCity	KIRTLAND
LocationZip	
ACCTTYPE	VACANT_LAND

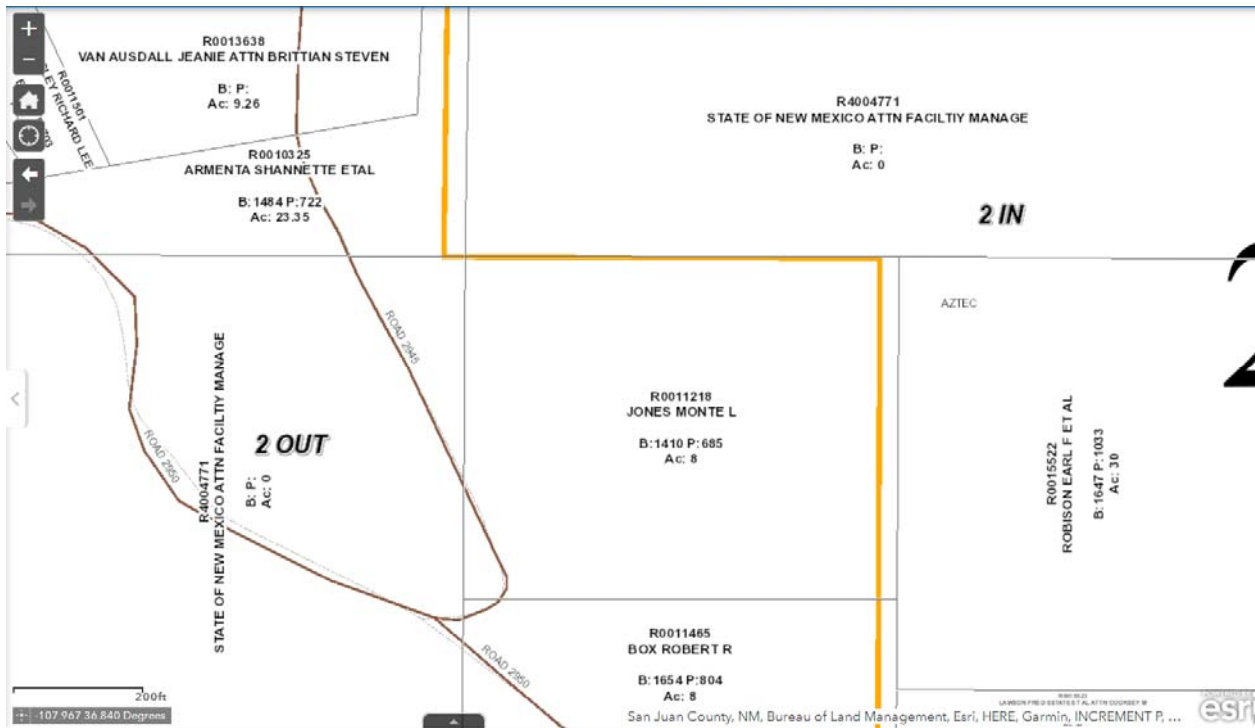


Parcel

OBJECTID 32414
 PARCELNO 2062179200229
 ShapeArea 1,326,016.38
 Shape
 OBJECTID 8,682
 ACCOUNTNO R0015522
 PARCELNB 2062179200229
 NAME1 ROBISON EARL F ET AL
 NAME2
 ADDRESS 26412 S HWY 170
 CITYSTATEZIP CANBY, OR 97013
 RECEIPTNO 201908868
 BOOK 1647
 PAGE 1033
 GrossAcres 30.00
 SUBNO
 SUBNAME
 LOT
 BLOCK
 TRACT
 ReviewFlag 0
 LEGAL1 NENSW AND N1/2NWSE OF SEC 02 30 11 30 AC IN BK
 LEGAL2
 AssessorsLink [More info](#)
 LocationAddress ROAD 2950

Parcel

OBJECTID 43334
 PARCELNO 2099199900900
 ShapeArea 43,582,407,458.55
 Shape
 OBJECTID 43,274
 ACCOUNTNO R4004754
 PARCELNB 2099199900900
 NAME1 FEDERAL
 NAME2
 ADDRESS
 CITYSTATEZIP
 RECEIPTNO
 BOOK
 PAGE
 GrossAcres 0.00
 SUBNO
 SUBNAME
 LOT
 BLOCK
 TRACT
 ReviewFlag 0
 LEGAL1
 LEGAL2
 AssessorsLink [More info](#)
 LocationAddress



Parcel

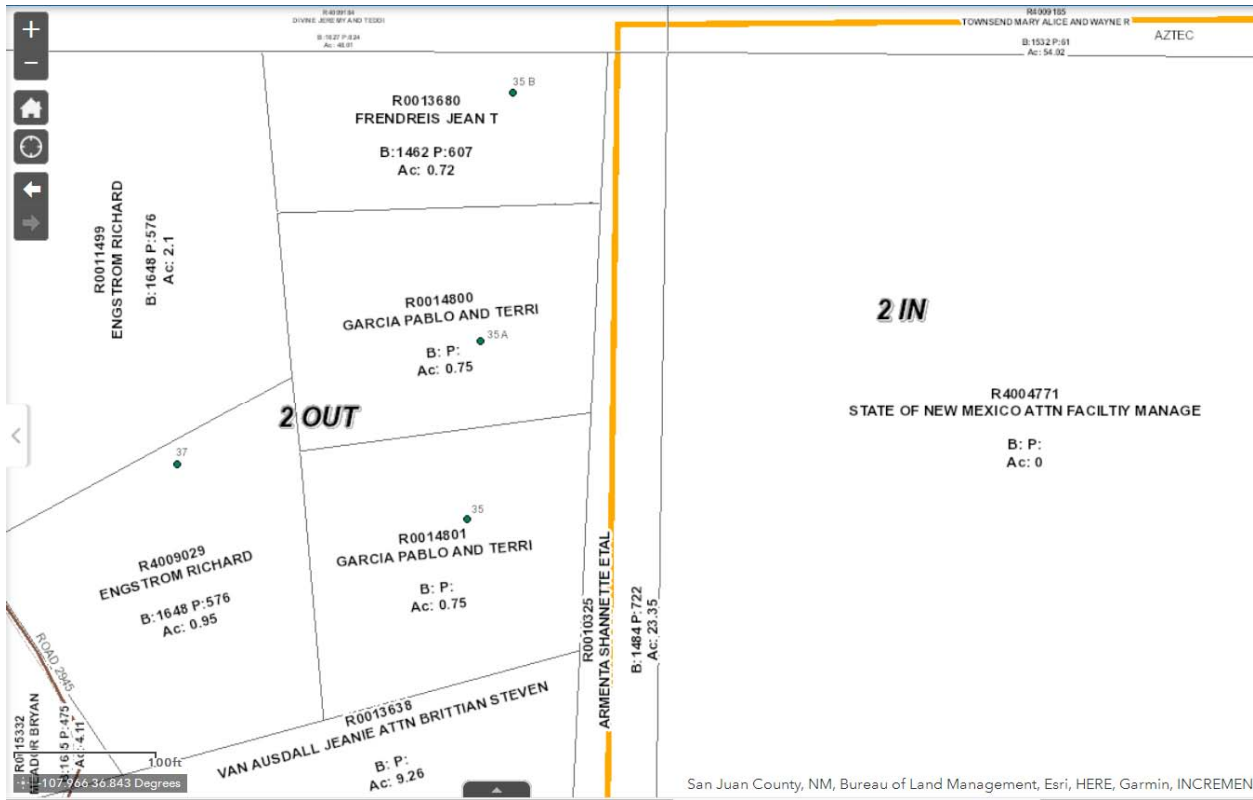
OBJECTID	32409
PARCELNO	2062179366238
ShapeArea	353,410.25
Shape	
OBJECTID	3,941
ACCOUNTNO	R0011218
PARCELNB	2062179366238
NAME1	JONES MONTE L
NAME2	
ADDRESS	2165 PINEHURST CT
CITYSTATEZIP	ALAMOGORDO, NM 88310
RECEPTNO	2005-09542
BOOK	1410
PAGE	685
GrossAcres	8.00
SUBNO	
SUBNAME	
LOT	
BLOCK	
TRACT	
ReviewFlag	0
LEGAL1	A PART OF THE W1/2 E1/2SW 023011 DESC AS F
LEGAL2	
AssessorsLink	More info
LocationAddress	ROAD 2945

Parcel

OBJECTID	32419
PARCELNO	2088188888888
ShapeArea	273,813,191.88
Shape	
OBJECTID	43,276
ACCOUNTNO	R4004771
PARCELNB	2088188888888
NAME1	STATE OF NEW MEXICO ATTN FACILITY MANAGE
NAME2	
ADDRESS	PO BOX 6850
CITYSTATEZIP	SANTA FE, NM 87502
RECEPTNO	
BOOK	
PAGE	
GrossAcres	0.00
SUBNO	
SUBNAME	
LOT	
BLOCK	
TRACT	
ReviewFlag	0
LEGAL1	
LEGAL2	
AssessorsLink	More info
LocationAddress	US 64

Parcel	
OBJECTID	34608
PARCELNO	2063179063456
ShapeArea	216,482.01
Shape	
OBJECTID	2,933
ACCOUNTNO	R0010325
PARCELNB	2063179063456
NAME1	ARMENTA SHANNETTE ETAL
NAME2	
ADDRESS	16194 US 550
CITYSTATEZIP	AZTEC, NM 87410-0000
RECEPTNO	2008-16899
BOOK	1484
PAGE	722
GrossAcres	23.35
SUBNO	
SUBNAME	
LOT	
BLOCK	
TRACT	
ReviewFlag	0
LEGAL1	APPROX 20 A IN NE NE 033011 APPROX 3.35 AC IN SV
LEGAL2	
AssessorsLink	More info
LocationAddress	16194 US 550
Zoom to	

Parcel	
OBJECTID	34589
PARCELNO	2062179446331
ShapeArea	403,307.39
Shape	
OBJECTID	6,608
ACCOUNTNO	R0013638
PARCELNB	2062179446331
NAME1	VAN AUSDALL JEANIE ATTN BRITTIAN STEVEN
NAME2	
ADDRESS	2844 E MAIN ST SUITE 106 PMB#124
CITYSTATEZIP	FARMINGTON, NM 87401
RECEPTNO	
BOOK	
PAGE	
GrossAcres	9.26
SUBNO	
SUBNAME	
LOT	
BLOCK	
TRACT	
ReviewFlag	0
LEGAL1	BEG N80-36E 902.7 FT FROM W1/4 OF SEC 2 30 11. TH W1/4 CORNER OF SEC 2 30 11. THENCE N25-15W 610
LEGAL2	
AssessorsLink	More info
LocationAddress	21 ROAD 2945
Zoom to	



Parcel

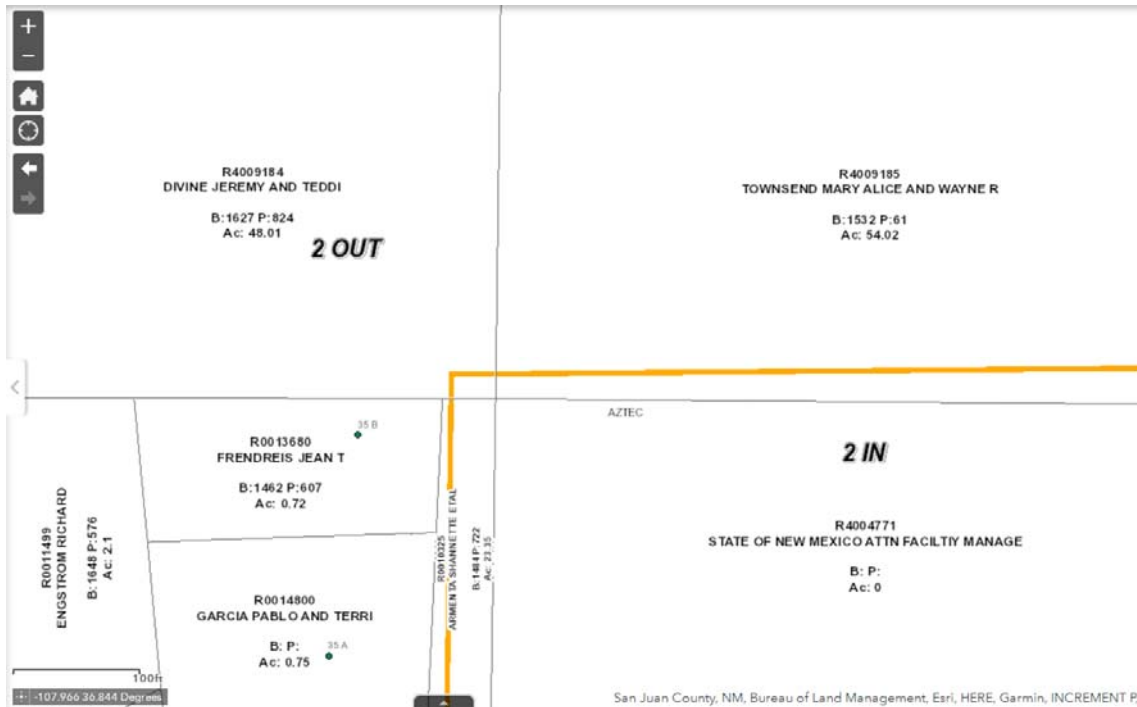
OBJECTID 34551
 PARCELNO 2062179408361
 ShapeArea 33,133.01
 Shape
 OBJECTID 7,927
 ACCOUNTNO R0014801
 PARCELNB 2062179408361
 NAME1 GARCIA PABLO AND TERRI
 NAME2
 ADDRESS 35A ROAD 2945
 CITYSTATEZIP AZTEC, NM 87410-0000
 RECEIPTNO
 BOOK
 PAGE
 GrossAcres 0.75
 SUBNO
 SUBNAME
 LOT
 BLOCK
 TRACT
 ReviewFlag 0
 LEGAL1 THAT PORTION OF W1/2NW1/4 023011 BEG N80°3
 TO BEG. CONT. 0.76 AC BK.1262 PG.736
 LEGAL2
 AssessorsLink [More info](#)
 LocationAddress 35 ROAD 2945
 Zoom to

Parcel

OBJECTID 34554
 PARCELNO 2062179409375
 ShapeArea 32,876.78
 Shape
 OBJECTID 7,926
 ACCOUNTNO R0014800
 PARCELNB 2062179409375
 NAME1 GARCIA PABLO AND TERRI
 NAME2
 ADDRESS 35A ROAD 2945
 CITYSTATEZIP AZTEC, NM 87410-0000
 RECEIPTNO
 BOOK
 PAGE
 GrossAcres 0.75
 SUBNO
 SUBNAME
 LOT
 BLOCK
 TRACT
 ReviewFlag 0
 LEGAL1 THAT PORTION OF W1/2NW1/4 23011 BEG N80°36'E 1281.2 FT
 TO BEG. CONT. .75 AC BK.1256 PG.6 PG.7
 LEGAL2
 AssessorsLink [More info](#)
 LocationAddress 35A ROAD 2945
 Zoom to

Parcel

OBJECTID 34559
PARCELNO 2062179410389
ShapeArea 31,561.73
Shape
OBJECTID 6,691
ACCOUNTNO R0013680
PARCELNB 2062179410389
NAME1 FRENDRIS JEAN T
NAME2
ADDRESS 35B ROAD 2945
CITYSTATEZIP AZTEC, NM 874100000
RECEPTNO 2007-15364
BOOK 1462
PAGE 607
GrossAcres 0.72
SUBNO
SUBNAME
LOT
BLOCK
TRACT
ReviewFlag 0
LEGAL1 BEG N80°36'E 1281.2 FT AND N2°45'E 992.25 FT FR
LEGAL2
AssessorsLink [More info](#)
LocationAddress 35 B ROAD 2945



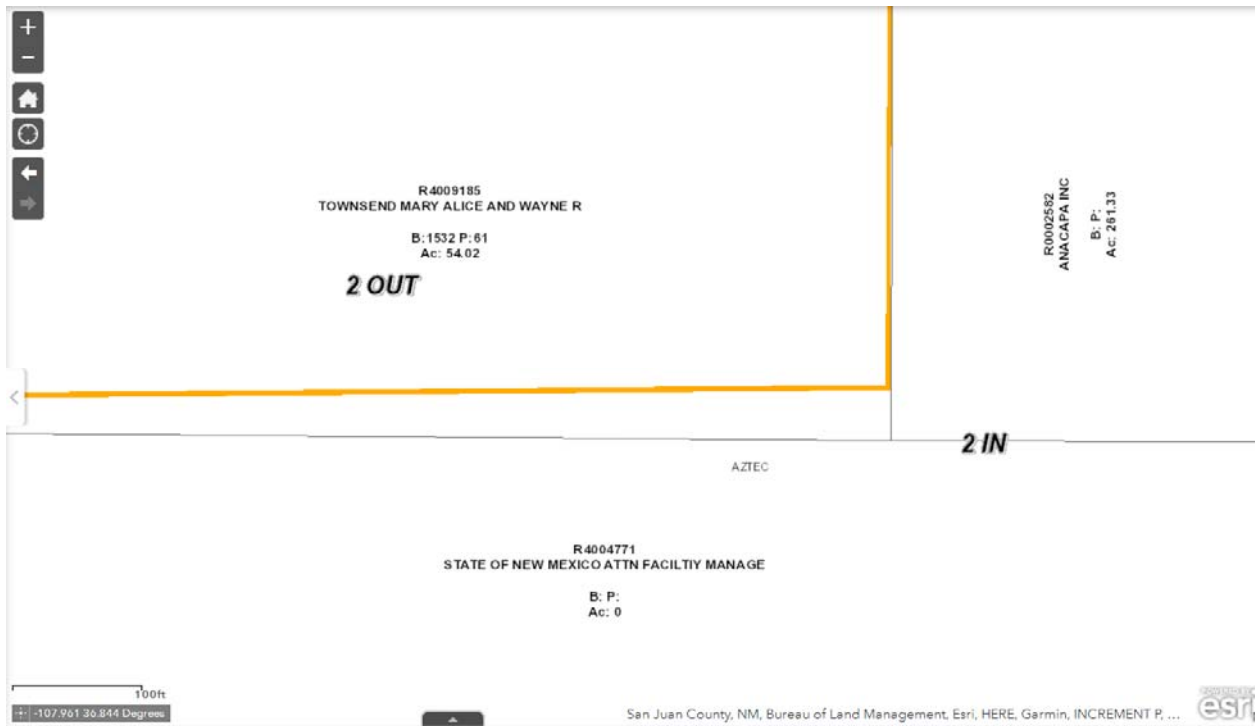
San Juan County, NM, Bureau of Land Management, Esri, HERE, Garmin, INCREMENT P.

Parcel

OBJECTID	34611
PARCELNO	2062179488498
ShapeArea	5,423,594.15
Shape	
OBJECTID	35,639
ACCOUNTNO	R4009184
PARCELNB	2062179488498
NAME1	DIVINE JEREMY AND TEDDI
NAME2	
ADDRESS	PO BOX 132
CITYSTATEZIP	AZTEC, NM 87410
RECEPTNO	201802294
BOOK	1627
PAGE	824
GrossAcres	48.01
SUBNO	
SUBNAME	
LOT	
BLOCK	
TRACT	
ReviewFlag	0
LEGAL1	BEG S0-17-6W 1313.31 FT AND N89-35-57W 1323.476.13 FT, N01-20-46E 830.59 FT, N0-56-28W 80.02
LEGAL2	
AssessorsLink	More info
LocationAddress	US 550

Parcel

OBJECTID	32396
PARCELNO	2062179328471
ShapeArea	5,423,594.15
Shape	
OBJECTID	35,640
ACCOUNTNO	R4009185
PARCELNB	2062179328471
NAME1	TOWNSEND MARY ALICE AND WAYNE R
NAME2	
ADDRESS	3914 N MESA VERDE
CITYSTATEZIP	FARMINGTON, NM 87401
RECEPTNO	2011-12580
BOOK	1532
PAGE	61
GrossAcres	54.02
SUBNO	
SUBNAME	
LOT	
BLOCK	
TRACT	
ReviewFlag	0
LEGAL1	BEG AT NE CORNER OF NW/4 OF SEC 2 30 11. THENCE S0-44-37E 763.17 FT, S89-30-19E 1311.57 FT TO BEG. BK.
LEGAL2	
AssessorsLink	More info
LocationAddress	US 550



Parcel

OBJECTID	36699
PARCELNO	2062179202466
ShapeArea	6,881,321.88
Shape	
OBJECTID	2,432
ACCOUNTNO	R0002582
PARCELNB	2062179202466
NAME1	ANACAPA INC
NAME2	
ADDRESS	1552 S CITRUS AVE
CITYSTATEZIP	ESCONDIDO, CA 92027-4621
RECEIPTNO	
BOOK	
PAGE	
GrossAcres	261.33
SUBNO	
SUBNAME	
LOT	
BLOCK	
TRACT	
ReviewFlag	0
LEGAL1	LOT 5 NWNE SEC 02 30 11 LOT 2 SWSE SEC10 30 BK.1503 PG.627 LESS 41.12 AC IN BK.1503 PG.621
LEGAL2	
AssessorsLink	More info
LocationAddress	S MAIN AVE
Zoom to	

7011 3500 0001 5644 4858

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Santa Fe, NM 87501

Postage	\$3.55	\$0.00
Certified Fee	\$0.00	\$0.00
Return Receipt Fee (Endorsement Required)	\$0.00	\$0.00
Restricted Delivery Fee (Endorsement Required)	\$0.00	\$0.00
Total Postage & Fees	\$4.10	\$0.00

Total Postage & Fees \$4.10

Sent To
 State of New Mexico Land Office
 310 Old Santa Fe Trail
 Santa Fe, NM 87501

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7011 3500 0001 5644 4841

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Farmington, NM 87402

Postage	\$3.55	\$0.00
Certified Fee	\$0.00	\$0.00
Return Receipt Fee (Endorsement Required)	\$0.00	\$0.00
Restricted Delivery Fee (Endorsement Required)	\$0.00	\$0.00
Total Postage & Fees	\$4.10	\$0.00

Total Postage & Fees \$4.10

Sent To
 Bureau of Land Management
 6251 College Blvd, Suite A
 Farmington, NM 87402

PS Form 3800, August 2006 See Reverse for Instructions

7011 3500 0001 5644 4797

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Escondido, CA 92027

Postage	\$3.55	\$0.00
Certified Fee	\$0.00	\$0.00
Return Receipt Fee (Endorsement Required)	\$0.00	\$0.00
Restricted Delivery Fee (Endorsement Required)	\$0.00	\$0.00
Total Postage & Fees	\$4.10	\$0.00

Total Postage & Fees \$4.10

Sent To
 Anacapa, Inc.
 4547 S. Cimarron Ave.
 Escondido, CA 92027-4621

PS Form 3800, August 2006 See Reverse for Instructions

7011 3500 0001 5644 4780

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Canby, OR 97013

Postage	\$3.55	\$0.00
Certified Fee	\$0.00	\$0.00
Return Receipt Fee (Endorsement Required)	\$0.00	\$0.00
Restricted Delivery Fee (Endorsement Required)	\$0.00	\$0.00
Total Postage & Fees	\$4.10	\$0.00

Total Postage & Fees \$4.10

Sent To
 Robison, Earl F et al
 26412 S Hwy 170
 Canby, OR 97013

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7011 3500 0001 5644 4773

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Alamosordo, NM 88310

Postage	\$3.55	\$0.00
Certified Fee	\$0.00	\$0.00
Return Receipt Fee (Endorsement Required)	\$0.00	\$0.00
Restricted Delivery Fee (Endorsement Required)	\$0.00	\$0.00
Total Postage & Fees	\$4.10	\$0.00

Total Postage & Fees \$4.10

Sent To
 Jones, Monte L.
 2165 Pinehurst Ct.
 Alamosordo, NM 88310

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7011 3500 0001 5644 4766

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Aztec, NM 87410

Postage	\$3.55	\$0.00
Certified Fee	\$0.00	\$0.00
Return Receipt Fee (Endorsement Required)	\$0.00	\$0.00
Restricted Delivery Fee (Endorsement Required)	\$0.00	\$0.00
Total Postage & Fees	\$4.10	\$0.00

Total Postage & Fees \$4.10

Sent To
 Armenta, Shannette et al
 16194 U.S. Hwy 550
 Aztec, NM 87410

PS Form 3800, August 2006 See Reverse for Instructions

7011 3500 0001 5644 4759

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Postage	\$3.55
Certified Fee	\$0.00
Return Receipt Fee (Endorsement Required)	\$0.00
Restricted Delivery Fee (Endorsement Required)	\$0.00
Total Postage & Fees	\$4.10

Postmark Here
0501 30
AUG 25 2020
N. Crandell - Aug 2020

Sent To
Van Ausall, Jeanie | Attn: Brittan Steven
2844 E Main St., Suite 106, PMB #124
Farmington, NM 87401

PS Form 3800, August 2006 See Reverse for Instructions

7011 3500 0001 5644 4742

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Postage	\$3.55
Certified Fee	\$0.00
Return Receipt Fee (Endorsement Required)	\$0.00
Restricted Delivery Fee (Endorsement Required)	\$0.00
Total Postage & Fees	\$4.10

Postmark Here
0501 30
AUG 25 2020
N. Crandell - Aug 2020

Sent To
Garcia, Pablo and Terri
35A Road 2945
Aztec, NM 87410

PS Form 3800, August 2006 See Reverse for Instructions

7011 3500 0001 5644 4735

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Postage	\$3.55
Certified Fee	\$0.00
Return Receipt Fee (Endorsement Required)	\$0.00
Restricted Delivery Fee (Endorsement Required)	\$0.00
Total Postage & Fees	\$4.10

Postmark Here
0501 30
AUG 25 2020
N. Crandell - Aug 2020

Sent To
Frederick, Joan Y
35B Road 2945
Aztec, NM 87410

PS Form 3800, August 2006 See Reverse for Instructions

7011 3500 0001 5644 4728

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Aztec, NM 87410

OFFICIAL USE

Postage	\$3.55
Certified Fee	\$0.00
Return Receipt Fee (Endorsement Required)	\$0.00
Restricted Delivery Fee (Endorsement Required)	\$0.00
Total Postage & Fees	\$4.10

Postmark Here
0501 30
AUG 25 2020
N. Crandell - Aug 2020

Sent To
Divine, Jeremy and Teddi
P.O. Box 132
Aztec, NM 87410

PS Form 3800, August 2006 See Reverse for Instructions

7011 3500 0001 5644 4711

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Farmington, NM 87401

OFFICIAL USE

Postage	\$3.55
Certified Fee	\$0.00
Return Receipt Fee (Endorsement Required)	\$0.00
Restricted Delivery Fee (Endorsement Required)	\$0.00
Total Postage & Fees	\$4.10

Postmark Here
0501 30
AUG 25 2020
N. Crandell - Aug 2020

Sent To
Townsend, Mary Alice and Wayne R
3914 N Mesa Verde
Farmington, NM 87401

PS Form 3800, August 2006 See Reverse for Instructions

7011 3500 0001 5644 4834

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For delivery information visit our website at www.usps.com

Aztec, NM 87410

OFFICIAL USE

Postage	\$3.55	0501
Certified Fee	\$0.00	30
Return Receipt Fee (Endorsement Required)	\$0.00	Postmark Here
Restricted Delivery Fee (Endorsement Required)	\$0.00	
Total Postage & Fees	\$4.10	

08/25/2020
 N Crandell - Aug 2020

Sent To
 City Clerk, Aztec City Hall
 201 W. Chaco St.
 Aztec, NM 87410

PS Form 3800, August 2006 See Reverse for Instructions

7011 3500 0001 5644 4827

U.S. Postal Service™
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For delivery information visit our website at www.usps.com

Bloomfield, NM 87413

OFFICIAL USE

Postage	\$3.55	0501
Certified Fee	\$0.00	30
Return Receipt Fee (Endorsement Required)	\$0.00	Postmark Here
Restricted Delivery Fee (Endorsement Required)	\$0.00	
Total Postage & Fees	\$4.10	

08/25/2020
 N Crandell - Aug 2020

Sent To
 City Clerk, City of Bloomfield
 915 N. First Street
 Bloomfield, NM 87413

PS Form 3800, August 2006 See Reverse for Instructions

7011 3500 0001 5644 4810

U.S. Postal Service™
CERTIFIED MAIL™ RECEIPT
 (Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com

Farmington, NM 87401

OFFICIAL USE

Postage	\$3.55	0501
Certified Fee	\$0.00	30
Return Receipt Fee (Endorsement Required)	\$0.00	Postmark Here
Restricted Delivery Fee (Endorsement Required)	\$0.00	
Total Postage & Fees	\$4.10	

08/25/2020
 N Crandell - Aug 2020

Sent To
 City Clerk, City of Farmington
 800 Municipal Drive
 Farmington, NM 87401

PS Form 3800, August 2006 See Reverse for Instructions

7011 3500 0001 5644 4803

U.S. Postal Service™
CERTIFIED MAIL™ RECEIPT
 (Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com

Aztec, NM 87410

OFFICIAL USE

Postage	\$3.55	0501
Certified Fee	\$0.00	30
Return Receipt Fee (Endorsement Required)	\$0.00	Postmark Here
Restricted Delivery Fee (Endorsement Required)	\$0.00	
Total Postage & Fees	\$4.10	

08/25/2020
 N Crandell - Aug 2020

Sent To
 County Clerk, San Juan County
 P.O. Box 550
 Aztec, NM 87410

PS Form 3800, August 2006 See Reverse for Instructions



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 4711

August 24, 2020

Townsend, Mary Alice and Wayne R
3914 N Mesa Verde
Farmington, NM 87401

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 **North Crandell Compressor Station**. The expected date of application submittal to the Air Quality Bureau is on or near August 25, 2020.

The exact location of the facility is latitude 36° 50' 30.0" latitude and -107° 57' 27.5" longitude, approximately 1.3 miles east-northeast of the intersection of US 550 and NM 173 in Aztec, San Juan County.

The following permit modifications are proposed:

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Particulate Matter less than 2.5 um diameter (PM _{2.5})	0.3	1.4
Total sum of all Hazardous Air Pollutants (HAPs)	0.9	5.6
Green House Gas Emissions as Total CO ₂ e	n/a	27,895

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

Townsend, Mary Alice and Wayne R
August 24, 2020
Page 2

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Sincerely,



Monica Smith
Environmental Specialist

Harvest Four Corners LLC
1755 Arroyo Drive
Bloomfield, NM 87413

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Aztec City Hall
201 W. Chaco
Aztec, NM 87410

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TX-GC10479445-01

NBA

Continued from Page 1B

question on his left shoe ("What would Kobe do?") and wrote the answer on his right shoe ("Shoot"). And when the Lakers huddled up together, they yelled out "1, 2, 3, Mamba!" They knew Bryant was listening.

"We've always wanted to embody what he stood for," Lakers coach Frank Vogel said. "We all know that he would want us to keep our foot on the gas."

James finished with 30 points on 10-of-12 shooting along with 10 assists. Anthony Davis added 18 points, five rebounds and five assists before sitting out the second half with back spasms and said afterwards he "is doing fine." And the Lakers forced Portland to commit 17 turnovers.

It did not take long for the Lakers to exert their dominance. The Lakers stormed out to a 24-8 lead with 4:58 left in the first quarter, a symbolic nod to Bryant wearing both No. 8 (1996-2006) and No. 24 (2007-2015).

"I was like, OK, this is a sign," James said. "He's here in the building."

The Lakers played a two-minute



Lakers forward LeBron James passes between Trail Blazers guard Gary Trent Jr., left, and center Hassan Whiteside on Monday. KIM KLEMENT/USA TODAY SPORTS

Bryant video that general manager Rob Pelinka and assistant coach Lionel Hollins put together, and with Los Angeles and Orange County declaring Aug. 24 as Kobe Bryant Day in homage to his two jersey numbers, the Lakers

sought to make him proud with their on-court play.

"We just wanted to make sure that we did everything we could to get this win for him," Davis said.

Others around the NBA have thought the same thing.

When Oklahoma City Thunder guard Chris Paul reflected on Bryant's birthday on Sunday, he first became touched with seeing a photo of former Lakers forward Pau Gasol with Bryant's surviving daughters (Natalia, Capri, Bianca). Paul's mind then wandered toward the present day and pondered, "I wonder what Bean would've been like in this bubble. Kobe was a killer."

Those in NBA circles believe Bryant would have found new innovative training methods to compensate for the quarantined restrictions during the suspended seasons.

They sense Bryant would have adjusted just fine toward playing in empty gyms, and the think Bryant would have embraced competing in the campus bubble more than lamenting its limitations.

"He would probably love it because it's all basketball in many of the same ways some of our guys like it," Vogel

said, "It's basketball around the clock and guys are really locked in. There's not a lot of external distraction."

There have been reminders of Bryant in the bubble.

Dallas Mavericks star Luka Doncic made a game-winning shot against the Clippers despite playing on a sprained left ankle, just as Bryant did in the 2000 NBA Finals.

Portland Trail Blazers guard Damian Lillard has played through a dislocated left finger, just as Bryant played through a fractured right index finger during the 2009-10 season.

And the Lakers have reminded themselves of Bryant's uncompromising worth ethic when they either grieved his passing or worked through inconsistency at the season restart.

"Kobe made it cool as hell to be a Laker for 20 years," Vogel said. "He just had that swag about him and with his team. He embodied this organization. He's the greatest Laker of all time."

Debates aside, it is clear which Lakers icon has motivated them lately. All they had to do was look at their jerseys, shirts and shoes for the answer.

"RIP Kobe, my brother," Kuzma said. "I love you."

SPORTS ON TV

(All times Mountain)
GOLF
 1 p.m. PGA Tour Golf: The BMW Championship Charity Event, Olympia Fields North Course, Olympia Fields, Ill
 4 p.m. PGA Tour Champions Golf: The Charles Schwab Series, Final Round, Ozark National Golf Course, Hollister, Mo
HORSE RACING
 11 a.m. FS2 NYRA: Saratoga Live, Saratoga Race Course, Saratoga Springs, NY
KBO BASEBALL
 3:25 a.m. ESPN2 LG at Samsung
MLB BASEBALL
 12 p.m. MLB Network Pittsburgh at Chicago White Sox
 5 p.m. ESPN NY Yankees at Atlanta
 8 p.m. ESPN LA Dodgers at San Francisco
NBA BASKETBALL
 2 p.m. NBA TV Eastern Conference First Round: Orlando vs Milwaukee, Game 5, Disney's Wide World of Sports Complex, Orlando, Fla
 4:30 p.m. TNT Western Conference First Round: Oklahoma City vs Houston, Game 5, Disney's Wide World of Sports Complex, Orlando, Fla
 7 p.m. TNT Western Conference First Round: Portland vs LA Lakers, Game 5, Disney's Wide World of Sports Complex, Orlando, Fla

NHL HOCKEY
 1 p.m. NBCSN Eastern Conference Second Round: NY Islanders vs Philadelphia, Game 2, Scotiabank Arena, Toronto
 6 p.m. NBCSN Eastern Conference Second Round: Tampa Bay vs Boston, Game 3, Scotiabank Arena, Toronto
 7:45 p.m. NBCSN Western Conference Second Round: Colorado vs Dallas, Game 3, Rogers Place Arena, Edmonton, Alberta
SOCCER (MEN'S)
 5:45 p.m. FS2 Canadian Premier League: The Island Games: HFX Wanderers FC vs FC Edmonton, 1st Stage, UPEI Alumni Field, Charlotte town, Prince Edward Island
TENNIS
 9 a.m. ESPN2 ATP/WTA: The Western and Southern Open, Quarterfinals, Flushing, NY
 11 a.m. TENNIS ATP/WTA: The Western and Southern Open, Quarterfinals, Flushing, NY
 5 p.m. TENNIS ATP/WTA: The Western and Southern Open, Quarterfinals, Flushing, NY
WNBA BASKETBALL
 5 p.m. ESPN2 Washington vs Atlanta, IMG Academy in Bradenton, Fla
 6 p.m. CBSN Los Angeles vs Minnesota, IMG Academy in Bradenton, Fla
 8 p.m. CBSN Connecticut vs Phoenix, IMG Academy in Bradenton, Fla

Racing

Continued from Page 1B

Now I'm like kind of actually doing good at this thing... I sort of never even thought, imagined I'd be doing this," she said. "It pumps your adrenaline up a lot... Especially when we have our off weekends, I just want to go out there and go race."

Because Mylee was brand new to the experience, her family understandably set the bar low and merely hoped she'd avoid getting into an accident on the track.

She did get in an minor accident in her debut after getting side-swiped, but that wasn't the end of the story.

It was the complete opposite, in fact. The number of races and strong finish-

es accumulated, and she quickly exceeded expectations.

"Every time we go out there, it's surreal. She is just amazing," said Shelley Rhames, Mylee's mother. "She goes out there, she goes for it and takes the fear out of me because I see her being so confident."

Mylee's been hit by other cars on the track. She's spun out and even ran head-on into a pole or hit the grandstand. She's experienced it all, except for rolling the car.

And yet, she's continued on, fearless and battle-tested with all those races now under her belt.

Mylee's now racing for race No. 34, venturing back up to Fairgrounds Speedway on Friday.

Matt Hollinshead covers sports for the Daily Times. He can be reached at 505-564-4577 or on Twitter at @MattH_717.

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Legal No. 432060 published in the Daily Times on Aug. 26, 2020

Legal Notices

La Plata County Probate Court
La Plata County, Colorado
1060 E. 2nd Avenue, Room 106
Durango, CO 81301
970-247-2300

NOTICE TO CREDITORS

Estate of Dell D. Hunter, Deceased
Case Number 2020PR30107

All persons having claims against the above named estate are required to present them to the personal representative, at the address below, within four (4) months after the date of the first publication of this notice, or the claims will be forever barred.

Legal Notices

The Turley Manzanera Ditch Co. of Blanco, NM will be accepting sealed bids for the design and construction of a new ditch diversion on the San Juan River near Turley, NM. Copies of bid specifications may be obtained by calling the number given below.

Table with 3 columns: Pollutant, Pounds per hour, Tons per year. Includes Nitrogen Oxides (NOx), Carbon Monoxide (CO), Volatile Organic Compounds (VOC), etc.

The owner and/or operator of the Plant is:
Hikorp Energy Company
3824 County Road 3100
Aztec, NM 87410

If you have any questions or comments about construction or operation of above facility, and want your comments to be made as a part of the permit review process, you must submit your comments in writing to the address below.

New Mexico Environment Department
Air Quality Bureau Permit Section
525 Camino de los Marquez, Suite 1
Santa Fe, New Mexico, 87505
Phone (505) 476-4300
Fax (505) 476-4375

Other comments and questions may be submitted verbally. Please refer to the company name and site name, as used in this notice or send a copy of this notice along with your comments, since the Department may not have received the permit Registration at the time of this notice.

Atención
Este es un aviso de la oficina de Calidad del Aire del Departamento del Medio Ambiente de Nuevo México, acerca de las emisiones producidas por un establecimiento en esta zona. 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.

PUBLIC NOTICE IS HEREBY GIVEN that the San Juan College Board of Trustees has changed the time and location of the monthly meetings scheduled for September 1, 2020. The Work Session will take place at 5:00 pm. The Board Meeting will take place at 6:15 pm.

SJC Work Session and Board Meeting - September 1, 2020
September 1, 2020 05:00 PM Mountain Time (US and Canada)

Please click the link below to join the webinar:
https://zoom.us/j/929701563599

Or iPhone one-tap:
US +13462487799, 929701563599
Or Telephone:
Dial for higher quality, dial a number based on your current location.

Agendas for these meetings will be available not less than 24 hours prior to the sessions and will be posted on the college website https://www.sanjuancollege.edu/boardoftrustees/meeting-agendas-and-minutes/.

Individuals who are in need of special services for this public meeting, should contact the President's Office at (505) 566-3209 or by e-mail (ellison@sajuancollege.edu). At least three (3) days prior to the meeting or as soon as possible. #436528. Daily Times, Aug 26, 2020.

Table with columns: Ad with a price generate more calls, Garage Sales work! Make some money for your money. Includes various classified ads for real estate, services, and items for sale.

Legal Notices

NOTICE OF AIR QUALITY PERMIT APPLICATION
Harvest Four Corners, LLC announces its application to the New Mexico Environment Department (NMED) for an air quality permit modification for its natural gas pipeline gathering and compression station known as the North Granddell Compressor Station.

The following permit modifications are proposed:
- Remove one of the four natural gas fired compressor engines;
- Increase the allowable annual condensate liquid throughput through the facility;
- Simultaneously reduce the annual VOC emissions from the condensate tank and separator;

Table with 3 columns: Pollutant, Pounds per hour, Tons per year. Includes Nitrogen Oxides (NOx), Carbon Monoxide (CO), Volatile Organic Compounds (VOC), etc.

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 the address: Permit Programs Manager, New Mexico Environment Department, Air Quality Bureau, 525 Camino de los Marquez, Suite 1, Santa Fe, New Mexico, 87505-1816.

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 20.2.72.006 NMAC. This regulation can be found in the "Permits" section of this web site.

Atención
Este es un aviso de la oficina de Calidad del Aire del Departamento del Medio Ambiente de Nuevo México, acerca de las emisiones producidas por un establecimiento en esta zona. Si usted desea información en español, por favor comuníquese con esa oficina al teléfono 505-476-5557.

Notice of Non-Discrimination
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Legal Notice, 4835660 published in the Daily Times on Aug. 26, 2020.



Check out your local classifieds today.

Table with columns: August 26 - Prime Time, listing various TV programs and their times. Includes CW KWGN, PBS KINRA, NBC KNSD, etc.

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 **North Crandell Compressor Station**. The expected date of application submittal to the Air Quality Bureau is on or near July 10, 2020.

The exact location of the facility is latitude 36° 50' 30.0" latitude and -107° 57' 27.5" longitude, approximately 1.3 miles east-northeast of the intersection of US 550 and NM 173 in Aztec, San Juan County.

The following permit modifications are proposed:

- Remove one of the four natural gas fired compressor engines;
- Increase the allowable annual condensate liquid throughput through the facility;
- Simultaneously reduce the annual VOC emissions from the condensate tank and separator; and
- Reduce the annual VOC emissions from startup, shutdown and routine maintenance activities (SSM).

The 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)	13.8	61
Carbon Monoxide (CO)	10.5	46
Volatile Organic Compounds (VOC)	5.2	60
Sulfur Dioxide (SO ₂)	0.02	0.1
Particulate Matter (PM)	0.3	1.4
Particulate Matter less than 10 um diameter (PM ₁₀)	0.3	1.4
Particulate Matter less than 10 um diameter (PM _{2.5})	0.3	1.4
Total sum of all Hazardous Air Pollutants (HAPs)	0.9	5.6
Green House Gas Emissions as Total CO _{2e}	n/a	27,895

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.

Atención

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N 36°50.516 LAT

W 107°57.474 LONG



HARVEST
MIDSTREAM

NORTH CRANDALL COMPRESSOR STATION

Air Quality Permit# 2031

SW/4, NE/4, Section 2 T-30-N, R-11-W

San Juan County, New Mexico

NOTICE

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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 **North Crandell Compressor Station**. The expected date of application submittal to the Air Quality Bureau is on or near July 10, 2020.

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Green House Gas Emissions as Total CO ₂ e	n/a	27,895

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.

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General Posting of Notices – Certification

I, Kayleigh Ruybalid, the undersigned, certify that on **August 4, 2020**, I posted a true and correct copy of the attached Public Notice in the following publicly accessible and conspicuous places in **San Juan** County, State of New Mexico on the following dates:

- | | | |
|----|---|-------------------|
| 1. | <u>N. Crandell Facility Entrance</u> | <u>08/04/2020</u> |
| 2. | <u>Aztec City Hall, Aztec NM 87410</u> | <u>08/04/2020</u> |
| 3. | <u>Aztec Post Office, Aztec NM 87410</u> | <u>08/04/2020</u> |
| 4. | <u>San Juan County Clerk’s Office, Aztec NM 87410</u> | <u>08/04/2020</u> |

Signed this 4th day of August, 2020.

Kayleigh Ruybalid
Signature

8/4/2020
Date

Kayleigh Ruybalid
Printed Name

EHS Compliance Administrator – Harvest Four Corners, LLC
Title

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 **North Crandell Compressor Station**, a natural gas pipeline compressor facility, located at latitude 36° 50' 30" and longitude -107° 57' 27.5" in Aztec, San Juan County, about 1.3 miles east-northeast of the junction of US Highway 550 and NM Highway 173.

Harvest proposes the following permit modifications:

- Remove one of the four natural gas fired compressor engines;
- Increase the allowable annual condensate liquid throughput through the facility;
- Simultaneously reduce the annual VOC emissions from the condensate tank and separator; and
- Reduce the annual VOC emissions from startup, shutdown and routine maintenance activities (SSM).

Public notices have been posted at the following locations:

<u>Posting Location</u>	<u>Date of Posting</u>
<u>North Crandell Compressor Station Entrance</u>	<u>08/04/2020</u>
<u>Aztec City Hall, Aztec, NM 87410</u>	<u>08/04/2020</u>
<u>Aztec Post Office, Aztec, NM 87410</u>	<u>08/04/2020</u>
<u>San Juan County Clerk's Office, Aztec, NM 87410</u>	<u>08/04/2020</u>

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

PSA submitted in online form 8/24/2020 to <https://radiodurango.com/public-service-announcements/>



Send a Public Service Announcement

Name submitted by L Killion, Cirrus Consulting, 505-466-1790
Organization on behalf of Harvest Four Corners
Date and day (Example: Tuesday, April 25th, 2018) Application to NMED Aug. 26
Time Business hours M-F, 8 AM - 5 PM
Location See PSA below
Event contact person See PSA below
Phone number See PSA below

Untitled 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 North Crandell Compressor Station, a natural gas pipeline compressor facility, located at latitude 36° 50' 30" and longitude -107° 57' 27.5" in Aztec, San Juan County, about 1.3 miles east-northeast of the junction of US Highway 550 and NM Highway 173.

Harvest proposes the following permit modifications:

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- Increase the allowable annual condensate liquid throughput through the facility;
- Simultaneously reduce the annual VOC emissions from the condensate tank and separator; and
- Reduce the annual VOC emissions from startup, shutdown and routine maintenance activities (SSM).

Public notices have been posted at the following locations:

Posting Location, Date of Posting

- * North Crandell Compressor Station Entrance, 08/04/2020
- * Aztec City Hall, Aztec, NM 87410, 08/04/2020
- * Aztec Post Office, Aztec, NM 87410, 08/04/2020
- * San Juan County Clerk's Office, Aztec, NM 87410, 08/04/2020

Questions and comments regarding this notice may be directed to the

Program Manager, New Source Review section of the 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

Submittal of Public Service Announcement – Certification

I, Lisa Killion , the undersigned, certify that on **August 24, 2020**, I submitted a public service announcement to **Four Corners Broadcasting (KIQX 101.3 FM, KIUP 930 AM, KKDC 93.3 FM, KRSJ 100.5 FM)** 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 **Four Corners Broadcasting DID NOT RESPOND.**

Signed this 26th day of August , 2020 .

 Lisa Killion
Signature

 8/26/2020
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 N Crandell Compressor Station facility is a natural gas production gathering and boosting station that receives natural gas from independent producers via gathering pipelines, and compresses the gas to boost the pipeline pressure of the field natural gas for transport downstream via pipeline. The natural gas pressure is increased (boosted) using compressors driven by the natural gas-fired reciprocating internal combustion engines located at the facility.

The natural gas stream typically contains liquids including mixed hydrocarbons (condensate) and produced water, which drop out of the gas stream via an inlet separator. The condensate and produced water liquids are stored in above ground fixed roof storage tanks, where they are stored until offsite transport via tank truck.

Various other miscellaneous exempt storage tanks at the facility store lube oil, used oil, glycol, waste water, methanol, and solvents and cleaning products. Waste products are hauled off-site as required.

Other emission sources include: startups, shutdowns and routine maintenance (SSM) from facility compressors and piping, and fugitive emissions from process piping (valves, flanges, seals, etc.).

The facility is authorized to operate continuously.

There are no process bottlenecks that limit production.

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):

North Crandell 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: **-20.0 TPY**
- b. CO: **-20.0 TPY**
- c. VOC: **-62.4 TPY**
- d. SOx: **0 TPY**
- e. PM: **-0.4 TPY**
- f. PM10: **-0.4 TPY**
- g. PM2.5: **-0.4 TPY**
- h. Fluorides: **0 TPY**
- i. Lead: **0 TPY**
- j. Sulfur compounds (listed in Table 2): **0 TPY**
- k. GHG: **-8,115 TPY**

Section 13

Determination of State & Federal Air Quality Regulations

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

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

Required Information for Specific Equipment:

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

Required Information for Regulations that Apply to the Entire Facility:

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

Regulatory Citations for Regulations That Do Not, but Could Apply:

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

Regulatory Citations for Emission Standards:

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

Federally Enforceable Conditions:

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

INCLUDE ANY OTHER INFORMATION NEEDED TO COMPLETE AN APPLICABILITY DETERMINATION OR THAT IS RELEVANT TO YOUR FACILITY'S NOTICE OF INTENT OR PERMIT.

EPA Applicability Determination Index for 40 CFR 60, 61, 63, etc: <http://cfpub.epa.gov/adi/>

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 REGULATION	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. Therefore, the regulation does not apply.
40 CFR 52	Approval and Promulgation of Implementation Plans	No		40 CFR 52.21, <i>Prevention of Significant Deterioration of Air Quality</i> is not applicable to the facility because 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	No		Applies if any other NSPS subpart applies. NSPS is not currently applicable to the equipment installed onsite.
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.
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).

FEDERAL REGULATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
				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 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. All of the storage tanks at the facility are below 75 m ³ capacity. Therefore, the regulation does not apply.
NSPS 40 CFR 60 Subpart GG	Standards of Performance for Stationary Gas Turbines	No		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 There are no turbines at the facility. The subpart is not applicable.
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: SO₂ 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.

FEDERAL REGULATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
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. Each of the Waukesha L7042GL compressor RICE (units 2, 4, and 5) are existing RICE under the regulation, constructed prior to the regulatory applicability date. Therefore, the regulation is not applicable to the RICE. The engines have not undergone either “modification” or “reconstruction” under NSPS.
NSPS 40 CFR 60, Subpart KKKK	Standards of Performance for Stationary Combustion Turbines	No		This subpart establishes emission standards and compliance schedules for the control of emissions from stationary combustion turbines that commenced construction, modification or reconstruction after February 18, 2005. There are no stationary gas turbines at the facility. The subpart does not apply.
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 and before September 18, 2015: <ul style="list-style-type: none">- Each affected single natural gas well as described in the regulation;- 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.
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	No		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): <ul style="list-style-type: none">- Each single reciprocating compressor (§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)).

FEDERAL REGULATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
				<p>The reciprocating compressors, pneumatic controllers, and 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.</p> <p>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.</p>
NESHAP 40 CFR 61, Subpart A	General Provisions	No		<p>40 CFR 61 National Emission Standards for Hazardous Air Pollutants (NESHAP) provides standards for equipment that emits hazardous air pollutants by specific source types.</p> <p>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.</p>
NESHAP 40 CFR 61, Subpart V	National Emission Standard for Equipment Leaks (Fugitive Emission Sources)	No		<p>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.</p> <p>Subpart V is not applicable because none of the potentially affected sources are in VHAP service.</p>
MACT 40 CFR 63, Subpart A	General Provisions	Yes	RICE units 2, 4, and 5	<p>Applies if any other 40 CFR 63 (NESHAP/MACT) subpart applies. Subpart ZZZZ is applicable to the compressor RICE at the facility.</p>
MACT 40 CFR 63, Subpart M	National Emission Standard for Asbestos	No		<p>The subpart includes standards for minimizing asbestos emissions from several operations, including demolition and renovation activities.</p> <p>No existing or planned operation or activity at this facility triggers the applicability of this requirement. Therefore, the regulation does not apply.</p>
MACT 40 CFR 63, Subpart HH	National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities	No		<p>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).</p> <p>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 to determine if the facility is a major [or an area] source. There are no glycol dehydrators at the facility; and the HAP emissions from the storage vessel with the potential for flash emissions (e.g., unit T1) are below the major HAP source emission threshold; therefore, the facility is an area source of HAP under subpart HH.</p> <p>Under §63.761(b)(2), the only affected source at an area source of HAP is each TEG dehydrator. As there are no glycol dehydrators at the facility, the regulation does not apply.</p>
MACT 40 CFR 63 Subpart HHH	National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities	No		<p>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.</p> <p>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.</p>

FEDERAL REGULATION	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		<p>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 . . . “</p> <p>The facility is not a major source of HAP, and does not have any affected units as defined in the regulation. The subpart does not apply.</p>
MACT 40 CFR 63, Subpart ZZZZ	National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines	Yes	RICE units 2, 4 and 5	<p>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 includes provisions for initial and continuous compliance demonstration.</p> <p>As defined at §63.6585(c), the station is an area source of HAP. Under §63.6590(a)(1)(iii), a stationary RICE 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.)</p> <p>Each of the unit 2, 4 and 5 RICE are a non-emergency, non-black start, 4-stroke, lean burn (4SLB) engine, site-rated at greater than 500 bhp, and sited at a remote location. The engines were constructed in 1991, 1994, and 1998, respectively, prior to the June 12, 2006 existing source threshold date. Therefore, units 2, 4, and 5 are each an “existing” engine under the subpart.</p> <p>As such, the RICE are operated in accordance with the applicable provisions of §63.6603(a) for existing RICE, including the maintenance and operating standards in Table 2d, row #8 including oil and filter changes, inspection of spark plugs and all hoses and belts every 2,160 hours of operating time or annually, whichever comes first. Engine startup and idle times will continue to be minimized in accordance with the regulation.</p> <p>Harvest will continue to meet all applicable requirements for compliance demonstration and notifications under the subpart as they apply to the RICE.</p>
MACT 40 CFR 63 Subpart DDDDD	National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters	No		<p>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.</p> <p>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.</p>
MACT 40 CFR 63 Subpart JJJJJ	National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources	No		<p>40 CFR 63, Subpart JJJJJ 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.</p> <p>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.</p>

FEDERAL REGULATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
40 CFR 64	Compliance Assurance Monitoring	No		<p>40 CFR 64, <i>Compliance Assurance Monitoring (CAM)</i> monitoring requirements are applicable to sources that are located 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.</p> <p>There are no emission units at the facility with uncontrolled emissions that are a major source. Therefore, the regulation is not applicable under §64.2(a).</p>
40 CFR 68	Chemical Accident Prevention Provisions	No		<p>40 CFR 68, <i>Chemical Accident Prevention Provisions</i>, is not applicable because the facility does not store any of the identified toxic and flammable substances in quantities exceeding the applicability thresholds.</p>
40 CFR 70	State Operating Permit Programs	No		<p>40 CFR 70, <i>State Operating Permit Programs</i>, 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 Plan (SIP) and 20.2.70 NMAC.</p> <p>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.</p>
40 CFR 71	Federal Operating Permit Programs	No		<p>40 CFR 71, <i>Federal Operating Permit Programs</i> 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.</p> <p>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.</p>
40 CFR 72	Permits Regulation	No		<p>40 CFR 72, <i>Permits Regulation</i>, is not applicable because the facility does not operate a source subject to Title IV of the Clean Air Act (CAA).</p>
40 CFR 73	Sulfur Dioxide Allowance System	No		<p>40 CFR 73, <i>Sulfur Dioxide Allowance System</i>, is not applicable to the facility because it does not operate a source subject to Title IV of the Clean Air Act (CAA).</p>
40 CFR 75	Continuous Emission Monitoring	No		<p>40 CFR 75, <i>Continuous Emission Monitoring</i>, 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).</p>
40 CFR 76	Acid Rain Nitrogen Dioxide Emission Reduction Program	No		<p>40 CFR 76, <i>Acid Rain Nitrogen Dioxide Emission Reduction Program</i>, is not applicable to the facility because it does not operate a source subject to Title IV of the Clean Air Act (CAA).</p>
40 CFR 77	Excess Emissions	No		<p>40 CFR 77, <i>Excess Emissions</i>, is not applicable to the facility because it does not operate a source subject to Title IV of the Clean Air Act (CAA).</p>

FEDERAL REGULATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
40 CFR 78	Appeal Procedures for Acid Rain Program	No		40 CFR 78, <i>Appeal Procedures for Acid Rain Program</i> , 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		<p>The purpose of 40 CFR 82, <i>Protection of Stratospheric Ozone</i> is to implement the <i>Montreal Protocol on Substances that Deplete the Ozone Layer</i>. 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.</p> <p>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.</p>
40 CFR 98	Mandatory Greenhouse Gas Reporting	Yes		<p>40 CFR 98, <i>Mandatory Greenhouse Gas Reporting</i>, 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 CO₂ equivalent (CO₂e) 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.</p> <p>The regulation applies to the facility insofar as it is part of a basin-wide oil and natural gas Gathering and Boosting Facility under 40 CFR 98, subpart W, <i>Petroleum Oil and Natural Gas Systems</i>, whose actual annual CO₂e emissions exceed the reporting thresholds defined in subpart A, <i>General Provision</i>, subpart C, <i>General Stationary Fuel Combustion Sources</i>, and subpart W.</p> <p>The GHG emissions including CO₂e are calculated and reported annually to the EPA.</p>
CAA Section 112(r)	Chemical Accident Prevention Provisions	No		CAA Section 112(r), <i>Chemical Accident Prevention Provisions</i> . 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 REGULATIONS CITATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
20.2.1 NMAC	General Provisions *	Yes	Facility	20.2.1 NMAC, <i>General Provisions</i> , 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, <i>Definitions</i> , 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, <i>Ambient Air Quality Standards</i> , 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, <i>Source Surveillance</i> , 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, <i>Excess Emissions</i> , 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, <i>Emissions Leaving New Mexico</i> , 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, <i>Gas Burning Equipment - Nitrogen Dioxide</i> , does not apply to the facility because it 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 (10E+06 MMBTU) per year, per unit.
20.2.34 NMAC	Oil Burning Equipment: NO₂	No		20.2.34 NMAC, <i>Oil Burning Equipment: NO₂</i> , 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, <i>Natural Gas Processing Plant – Sulfur</i> , 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, <i>Hydrocarbon Storage Facilities</i> , 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	RICE units 2, 4 & 5	20.2.61 NMAC, <i>Smoke and Visible Emissions</i> , limits visible emissions from stationary combustion equipment to less than 20 percent opacity. The station compressor engines are subject to the regulation as they are each a stationary combustion source.
20.2.70 NMAC	Operating Permits	No		20.2.70 NMAC, <i>Operating Permits</i> , contains permitting requirements for major sources of criteria and hazardous air pollutants subject to Part 70 (Title V) permitting requirements. With this application, Harvest requests federally enforceable permit requirement(s) such that the unit 4 and 5 RICE must be equipped with an oxidation catalytic converter to reduce emissions of CO and VOC, thereby reducing the overall facility PTE of any regulated air pollutant to below the 100 tpy Title V permitting threshold, resulting in a Title V Synthetic Minor source. The condensate tank VOC emissions reductions proposed in this application are not achieved through the installation and operation of add-on control device(s) such as the emission reductions on the RICE. The current construction permit 2013-M3 already contains the requirements for RICE unit 4 and 5 emission controls in Table 105.A: Control Equipment List; Table 106.A: Allowable Emissions; and condition A201 Engines, C. Catalytic Converter Operation (Units 4 and 5). Therefore, no new permit conditions for physical emission controls on the RICE are required in order to achieve facility Title V Synthetic Minor Source status. Upon incorporation of the requested permit revisions into the facility's construction permit, Harvest will request a voluntary cancellation of Title V Operating Permit P197-R3 as the facility will no longer subject to the Title V Operating Permits program under 20.2.70 NMAC.

STATE REGU- LATIONS CITATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
20.2.71 NMAC	Operating Permit Fees	No		20.2.71 NMAC, <i>Operating Permit Emission Fees</i> , specifies fees for emissions from facilities subject to Part 70 (Title V) permitting requirements under 20.2.70 NMAC. Although this regulation is applicable to the facility at the time of submittal of this construction permit revision application, it will not be applicable upon the voluntary cancellation of Title V Operating Permit P197-R3 following construction permit issuance.
20.2.72 NMAC	Construction Permits	Yes		20.2.72 NMAC, <i>Construction Permits</i> , 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. 2031-M3 , as revised.
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	No		20.2.74 NMAC, <i>Permits, Prevention of Significant Deterioration (PSD)</i> , provides requirements for sources subject to permit requirements for PSD facilities. The facility emissions do not exceed the PSD permit threshold levels. Therefore, the regulation does not apply.
20.2.75 NMAC	Construction Permit Fees	Yes		20.2.75 NMAC, <i>Construction Permit Fees</i> , establishes the fee schedule associated with the filing of permits and permit revisions. The regulation is applicable to the facility for construction permit applications submitted under 20.2.72 NMAC.
20.2.77 NMAC	New Source Performance Standards	No		20.2.77 NMAC, <i>New Source Performance Standards</i> , incorporates by reference specific Standards of Performance for New Stationary Sources (NSPS) codified under 40 CFR 60, as amended through January 15, 2017. None of the facility equipment are subject to an NSPS.
20.2.78 NMAC	Emission Standards for HAPS	No		20.2.78 NMAC, <i>Emission Standards for Hazardous Air Pollutants</i> , 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, <i>Permits - Nonattainment Areas</i> , is not applicable to the station because the compressor station is not located within a non-attainment area.

STATE REGU- LATIONS CITATION	Title	Applies? Enter Yes or No	Unit(s) or Facility	JUSTIFICATION:
20.2.80 NMAC	Stack Heights	No		20.2.80 NMAC, <i>Stack Heights</i> , establishes guidelines for the selection of an appropriate stack height for the purposes of atmospheric dispersion modeling. As noted in section 16 of the application, atmospheric dispersion modeling was previously provided in support of the facility's construction permit. Based on the NMAQB dispersion modeling guidance document, air quality dispersion modeling is not required for this construction permit application that proposes a reduction in VOC emissions.
20.2.82 NMAC	MACT Standards for source categories of HAPS	Yes	RICE units 2, 4, and 5	20.2.82 NMAC, <i>Maximum Achievable Control Technology Standards for Source Categories of Hazardous Air Pollutants</i> , 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 subpart ZZZZ.
20.2.84 NMAC	Acid Rain Permits	No		20.2.84 NMAC, <i>Acid Rain Permits</i> , 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)

- Title V Sources** (20.2.70 NMAC): By checking this box and certifying this application the permittee certifies that it has developed an **Operational Plan to Mitigate Emissions During Startups, Shutdowns, and Emergencies** defining the measures to be taken to mitigate source emissions during startups, shutdowns, and emergencies as required by 20.2.70.300.D.5(f) and (g) NMAC. This plan shall be kept on site to be made available to the Department upon request. This plan should not be submitted with this application.
- NSR** (20.2.72 NMAC), **PSD** (20.2.74 NMAC) & **Nonattainment** (20.2.79 NMAC) **Sources:** By checking this box and certifying this application the permittee certifies that it has developed an **Operational Plan to Mitigate Source Emissions During Malfunction, Startup, or Shutdown** defining the measures to be taken to mitigate source emissions during malfunction, startup, or shutdown as required by 20.2.72.203.A.5 NMAC. This plan shall be kept on site to be made available to the Department upon request. This plan should not be submitted with this application.
- Title V** (20.2.70 NMAC), **NSR** (20.2.72 NMAC), **PSD** (20.2.74 NMAC) & **Nonattainment** (20.2.79 NMAC) **Sources:** By checking this box and certifying this application the permittee certifies that it has established and implemented a Plan to Minimize Emissions During Routine or Predictable Startup, Shutdown, and Scheduled Maintenance through work practice standards and good air pollution control practices as required by 20.2.7.14.A and B NMAC. This plan shall be kept on site or at the nearest field office to be made available to the Department upon request. This plan should not be submitted with this application.
-

Section 15

Alternative Operating Scenarios

(Submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

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

Construction Scenarios: When a permit is modified authorizing new construction to an existing facility, NMED includes a condition to clearly address which permit condition(s) (from the previous permit and the new permit) govern during the interval between the date of issuance of the modification permit and the completion of construction of the modification(s). There are many possible variables that need to be addressed such as: Is simultaneous operation of the old and new units permitted and, if so for example, for how long and under what restraints? In general, these types of requirements will be addressed in Section A100 of the permit, but additional requirements may be added elsewhere. Look in A100 of our NSR and/or TV permit template for sample language dealing with these requirements. Find these permit templates at: 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 of NO_x and CO was previously submitted in the permit application for NSR permit 2031-M3. Dispersion modeling of other pollutants was waived. The dispersion modeling demonstrated compliance with the National Ambient Air Quality Standards and applicable PSD increments.

This construction permit revision application requests only removal of an engine and reductions of VOC emissions from equipment at the facility. Dispersion modeling is not required.

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
2	Compliance test for NO _x and CO, in accordance with Operating Permit P197-R3, Condition A201.B	September 4, 2019
4	Compliance test for NO _x and CO, in accordance with Operating Permit P197-R3, Condition A201.B	April 14, 2020
5	Compliance test for NO _x and CO, in accordance with Operating Permit P197-R3, Condition A201.B	July 24, 2018

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, Monica Smith, 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 4 day of August, 2020 upon my oath or affirmation, before a notary of the State of

New Mexico

Monica Smith
*Signature

8/4/2020
Date

Monica Smith
Printed Name

Environmental Spec.
Title

Scribed and sworn before me on this 4th day of August, 2020.

My authorization as a notary of the State of New Mexico expires on the

31st day of August, 2021.

Jodi L. Bohannon
Notary's Signature

August 4, 2020
Date

Jodi L. Bohannon
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.