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November 23, 2022

Cynthia J. Kaleri
Section Supervisor, Air Permits Section
U.S. EPA, Region
61201 Elm Street, Suite 500
Dallas, Texas 75270

Re: Revised Application to Renew Part 71 Title V Operating Permit R6FOP-NM-04-R2
Harvest Four Corners, LLC – Los Mestenios Compressor Station

Dear Ms. Kaleri,

Harvest Four Corners, LLC (Harvest) is pleased to submit to Region 6 of the Environmental Protection Agency (EPA) the attached revision to the Part 71 Title V permit renewal application (Permit Number R6FOP-NM-04-R2) for the Los Mestenios Compressor Station. Please note that this is the second revision to the original Title V renewal application submitted in February 2022. To avoid confusion, this revision of the application identifies what information is carried forward and what information is new.

Harvest appreciates the opportunity to submit the revised renewal application as well as EPA's commitment to continue processing the application. As requested by EPA, the revised application includes additional information addressing EPA's outstanding questions from October 19, 2022 as well as the October 31, 2022 rescission letter. Harvest's revised application seeks to address EPA's outstanding questions to the extent possible. Should EPA have any remaining concerns or need any additional information, Harvest remains committed to providing EPA the information it needs. For your convenience, Harvest has identified where in the application each response is provided.

- Provide the results EPA request that Harvest use the worst-case condensate sample analysis results over the 5-year time limit of the Los Mestenios Part 71 permit to calculate working and breathing losses and the flash emissions for the new TV application. Include the 2020 condensate analysis results when determining worst-case analysis and provide EPA a copy of these results. Also, revise all PTE calculations that utilize the condensate sample analysis to worst case scenario. **See Page 3 of Section 5.5.**
- Include information in the new application that reflect the changes to project scope and facility's process equipment. **See Page 3 of the Introduction.**
- Clarify in the new application if the condensate sample analysis is being used to calculate flash emission using VMGSYm for the pigging activities. If not, explain why? The worst-

case sample analysis results during the 5-year term of the permit should be used here as well. **See Page 2 of Section 5.8.**

- Harvest should not be using an outdated method to calculate tank emissions. Why is Harvest using an outdated method to calculate working and breathing losses of the tanks? Why is Harvest not using the same software to calculate working and breathing losses and the flash emissions? **See Pages 3 & 4 of Section 5.5.**
- Explain the use of emission factors from Colorado, meteorological data from Colorado, etc. instead of New Mexico. **See Page 4 of Section 5.5 & Page 2 of Section 5.9.**
- Provide recordkeeping to confirm the pigging activities number of events per week. **See Page 3 of Section 5.8.**
- Provide explanation for using 2010 TCEQ guidance for produced water emission factor and not more recent information. Also, use NMED guidance instead of, i.e., information specific to area where facility is located.. **See Page 2 of Section 5.9.**
- Provided an explanation on the meaning of "refinements" of VMGSym inputs. **See Page 4 of Section 5.5.**
- Revise process flow diagram to not include equipment that is out of service or decommissioned, and also submit documentation that this equipment is no longer an option for the facility. Usually when an operator has decommissioned equipment and wants to prove emission reductions, EPA requires proof that the supposedly decommissioned units are disconnected from the process and, if still on site, unable to be connected back up to the process and become emission units without significant reconstruction, requiring first evaluation for necessary pre-construction permitting. In fact, unless equipment has been removed from the site, we do not consider it "decommissioned," but rather disconnected from the process and no longer an emission unit. To prove Harvest could provide photos of the disconnection (e.g., piping removed and blind flanged) and a project work order (or equivalent), ***accompanied by a signed statement by the person responsible for CAA compliance***. **See Page 1 of Section 3.**
- Provide in the new application the methodologies throughout used to calculate PTE for each emission. Provide the model inputs i.e., characterization of the analysis as it is entered into the model and a characterization of the model outputs. Provide example calculation with the methodology used to calculate the pollutants emission rate that results in the total facility's PTE. Provide all utilized methodologies and equations, assumptions, emission factors used for the emissions calculation. Information should allow for the public to follow and understand. **See Page 3 of the Introduction & Page 1 of Section 5**
- The revised Facility's PTE calculations using worst case scenario of the condensate analysis over the 5-year term of the title V permit. **See Page 5 of Section 5.5.**
- The pigging activity emission calculations including an example calculation that aligns with an actual description of the activity as conducted at the Facility. **See Page 3 of Section 5.8.**
- An explanation of how VOC emissions are calculated using the well gas analysis for all the emission units that this analysis is used for and a calculation that demonstrates this description. **See Page 2 of Section 5.3, Page 2 of Section 5.4 & Page 3 of Section 5.8.**

- The complete characterization of the inputs and outputs to the VMGSym software used to calculate flash emissions and explanation why the model is being used separate of another model used for working and breathing losses from tanks – specifically explain how the different models, i.e., VMGSym and the outdated Tanks 4.09d, used together provide more accurate emission estimates for tank emissions instead of a single model like either VMGSym or TankESP that would account for all three types of emissions. **See Page 5 of Section 5.5.**
- Include the methodology/equations used to calculate the emissions for each emission unit with an example calculation of how the methodology is used. **See Page 2 of Section 5.**
- The Excel spreadsheets used to calculate the Facility emissions. **See Page 2 of Section 5.**

Thank you for your assistance. If you have questions or need any additional information, please contact me at (505) 632-4421.

Sincerely,

Oakley Hayes

Oakley Hayes

Attachment
Los Mestenios Compressor Station Title V Operating Permit Renewal Application – Revision 2

U.S ENVIRONMENTAL PROTECTION AGENCY (REGION 6)
RENEWAL APPLICATION (REVISION 2)
FOR PERMIT # R6FOP-NM-04-R2

LOS MESTENIOS COMPRESSOR STATION

Submitted By:

HARVEST FOUR CORNERS, LLC
1755 Arroyo Drive
Bloomfield, New Mexico 87413

Prepared By:

CIRRUS CONSULTING, LLC
11139 Crisp Air Drive
Colorado Springs, Colorado 80908
(801) 294-3024

November 2022

Table of Contents

Introduction

The Harvest Four Corners, LLC (Harvest) Los Mestenios Compressor Station (Los Mestenios) currently operates under Part 71 Title V permit R6FOP-NM-04-R2, issued by EPA on August 8, 2017.

The facility is located on the Jicarilla Apache Indian Reservation, and as the Tribe has not developed their own rules and regulations concerning air emission sources, the facility is presently under the jurisdiction of the EPA.

Description of Facility

The following description of the facility was taken from Revision 1 of this application.

The Los Mestenios Compressor Station is a natural gas compressor station that accepts produced natural gas gathered from various wellheads from the gas field surrounding the facility, and compresses this gas for delivery to natural gas processing facilities.

Under the existing Title V operating permit, the station is currently approved to operate a Solar Saturn T1200 natural gas fired turbine (Unit 1) and a Caterpillar G-399-TA 4 stroke rich burn (4SRB) reciprocating internal combustion engine (RICE) (Unit 2), both driving natural gas compressors. The existing permit also includes a 490-barrel (bbl) condensate storage tank (Unit T1) for which both flash and working/breathing losses are estimated, a 400-bbl condensate tank (Unit T2) with working/breathing losses only, fugitive emissions from valves, flanges, etc. (Unit F1), startup, shutdown, and maintenance emissions (Unit SSM) and miscellaneous insignificant emission sources.

Application History

Original Application

On January 21, 2022, a letter was submitted to the Environmental Protection Agency (EPA) Region 6 indicating that emissions at the Los Mestenios have dropped below the Title V major source thresholds. This occurred because the Caterpillar G-399-TA engine, a Title V major source by itself, was taken out of service and because flash emissions from the condensate storage tank dropped significantly.

At the request of EPA, a Title V permit renewal application was submitted in February 2022. In addition to renewing the Part 71 Title V permit, this original application identified several modifications to the facility:

- Unit 2 was to be replaced by a Waukesha L7042GL compressor engine. Note that the Caterpillar engine is no longer operational and has been disconnected from the process as indicated in pictures provided to EPA;

- The addition of one Scania DS11 diesel emergency generator (Unit 3). The emergency generator was installed during the latter half of calendar year 2019; however, Harvest has not been able to find records indicating EPA was notified of startup. That being the case, this application is being used to provide notice of installation and startup.

Revision 1

Revision 1 of the application was submitted in September 2022 to include several corrections and modifications.

- The 490-bbl condensate tank was changed to a 400-bbl condensate tank. The size indicated by previous applications was in error.

- Shortly after submittal of the original application it was learned that the most recent condensate analysis provided by Noble Analytical Laboratory to Harvest, for Los Mestenios, did not include all the pertinent constituents. The revision updated the condensate storage tank emission calculations. There was a slight drop in emissions from the two tanks.

- Harvest removed the Waukesha L7042GL compressor engine from the application. The Caterpillar engine would not be replaced. With elimination of the engine there was an associated decrease in SSM and equipment leak emissions.

- The original application identified the tank heater (Unit 5) as having a rating of 0.30 million British Thermal Units per hour (mmBtu/hr). The revision correctly identified the rating at 0.012 mmBtu/hr. Note that the unit is still an insignificant source.

- Pig launching and pig receiving were added to the application as insignificant sources.

Revision 2

Revision 2, this revision, is being submitted both to consolidate the additional information requested by EPA (at their request) and to modify the method of calculating the condensate storage tank emissions (also at EPA's request).

Additional information requested for the original application and Revision 1 was provided to EPA in February and August of 2022. Most of that information has been incorporated into this application. Pertinent information from those responses (including photos), not elsewhere included in this revision, are now provided in Section 8 of this application.

All additional information addressing EPA's outstanding questions from October 19, 2022 as well as the October 31, 2022 rescission letter, is provided in the body of this revision application, rather than in Section 8.

Response to EPA request for additional information:

- Include information in the new application that reflect the changes to project scope and facility's process equipment.

See the above written description.

Response to EPA request for additional information:

- Provide in the new application the methodologies throughout used to calculate PTE for each emission. Provide the model inputs i.e., characterization of the analysis as it is entered into the model and a characterization of the model outputs. Provide example calculation with the methodology used to calculate the pollutants emission rate that results in the total facility's PTE. Provide all utilized methodologies and equations, assumptions, emission factors used for the emissions calculation. <u>Information should allow for the public to follow and understand.</u>

Written explanations were provided in the previous versions of the application. These have been expanded so that the public might more easily follow and understand.

Section 1

Application Forms

Application forms are provided in this section. Please see the following pages.

OMB No. 2060-0336, Expires 11/30/2022

Federal Operating Permit Program (40 CFR Part 71)
GENERAL INFORMATION AND SUMMARY (GIS)

A. Mailing Address and Contact Information

Facility name: _Los Mestenios Compressor Station

Mailing address: Street or P.O. Box _1755 Arroyo Drive

City: _Bloomfield State: _NM_ ZIP: _87413_-______

Contact person: _Oakley Hayes Title _Environmental Specialist

Telephone: _(505) 632-4421_ Ext. ______

Facsimile: (505) 632-4782_ Ext. ______

B. Facility Location

Temporary source? ___Yes _X_No Plant site location _Section 2 5& 26, Township 26N, Range 5W (UTMH 292.3 km, UTMV 4,036.5 km, Zone 13)

City: _≈24 miles northwest of Gavilan__ State: _NM_ County: _Rio Arriba_ EPA Region: _6_

Is the facility located within:

Indian lands? _X_ YES ___ NO An offshore source in federal waters? ___ YES _X_ NO

Non-attainment area? ___ YES _X_NO If yes, for what air pollutants? _N/A

Within 50 miles of affected State? _X_ YES ___ NO If yes, what state(s)? _CO

C. Owner

Name: _Hilcorp Energy Company Street/P.O. Box: _1111 Travis Street

City: _Houston State: _TX_ ZIP: _77002 -_____

Telephone: _(713) 289 - 2630_ Ext: ______

D. Operator

Name: _Harvest Four Corners, LLC___ Street/P.O. Box: _1755 Arroyo Drive__

City: _Bloomfield State: _NM__ ZIP: _87413_ - ______

Telephone: _(505) 632 - 4600_ Ext: ______

E. Application Type

Mark only one permit application type and answer the supplementary question appropriate for the type marked.

___ Initial Permit _X_ Renewal ___ Significant Mod ___ Minor Permit Mod(MPM)

___ Group Processing, MPM ___ Administrative Amendment

For initial permits, when did operations commence? ____/____/____

For permit renewal, what is the expiration date of current permit? _08_/_07_/_2022_

F. Applicable Requirement Summary

Mark the types of applicable requirements that apply:

___ SIP	___ FIP/TIP	___ PSD	___ Non-attainment NSR
___ Minor source NSR	___ Section 111	___ Phase I acid rain	___ Phase II acid rain
___ Stratospheric ozone	___ OCS regulations	___ NESHAP	___ Sec. 112(d) MACT
_X_ Sec. 112(g) MACT	___ Early reduction of HAP	___ Sec 112(j) MACT	___ RMP [Sec.112(r)]

___ Section 129 ___ NAAQS, increments or visibility but for temporary sources (This is rare)

Is the source subject to the Deepwater Port Act? ___ YES _X_ NO

Has a risk management plan been registered? ___ YES _X_ NO Agency: ____________________

Phase II acid rain application submitted? ___ YES _X_ NO If YES, Permitting Authority: __________

G. Source-Wide PTE Restrictions and Generic Applicable Requirements

Cite and describe any emissions-limiting requirements and/or facility-wide "generic" applicable requirements.

Not applicable.

H. Process Description

List processes, products, and SIC codes for the facility.

Process	Products	SIC
Natural Gas Compression	Natural Gas	1389
Condensate Storage	Natural Gas Condensate	1389

I. Emission Unit Identification

Assign an emissions unit ID and describe each emissions unit at the facility. Control equipment and/or alternative operating scenarios associated with emissions units should by listed on a separate line. Applicants may exclude from this list any insignificant emissions units or activities.

Emissions Unit ID	Description of Unit
1	Solar Saturn 1200 Turbine
3	Scania DS11 Diesel Engine
SSM	Startup, Shutdown & Maintenance
F1	Piping Component Fugitive Emissions
T1	400 bbl Condensate Storage Tank
T2	400 bbl Condensate Storage Tank
L1	Condensate Truck Loading

J. Facility Emissions Summary

Enter potential to emit (PTE) for the facility as a whole for each regulated air pollutant listed below. Enter the name of the single HAP emitted in the greatest amount and its PTE. For all pollutants, stipulations to major source status may be indicated by entering "major" in the space for PTE. Indicate the total actual emissions for fee purposes for the facility in the space provided. Applications for permit modifications need not include actual emissions information.

NOx _20.21_ tons/yr VOC _140.92_ tons/yr SO2 _0.21_ tons/yr

PM-10 _0.38_ tons/yr CO _11.69_ tons/yr Lead _0.00_ tons/yr

Total HAP _14.60_ tons/yr

Single HAP with greatest amount _n-Hexane_ PTE _13.09_ tons/yr

Total of regulated pollutants (for fee calculation), Sec. F, line 5 of form FEE _173.42_ tons/yr

K. Existing Federally-Enforceable Permits

Permit number(s) _R6FOP-NM-04-R2_ Permit type _Part 71_ Permitting authority _EPA_

Permit number(s) __________________ Permit type ______________ Permitting authority __________

L. Emission Unit(s) Covered by General Permits – Not Applicable

Emission unit(s) subject to general permit ____

Check one: ___ Application made ___ Coverage granted

General permit identifier ________________________________ Expiration Date ____/____/____

M. Cross-referenced Information

Does this application cross-reference information? ___ YES _X_ NO (If yes, see instructions)

United States Environmental Protection Agency

OMB No. 2060-0336, Expires 11/30/2022

Federal Operating Permit Program (40 CFR Part 71)
EMISSION UNIT DESCRIPTION FOR FUEL COMBUSTION SOURCES (EUD-1)

A. General Information

Emissions unit ID: _1_ Description: _Solar Saturn 1200 Turbine_

SIC Code (4-digit): _1389_ SCC Code_20200201_

B. Emissions Unit Description

Primary use: _Compressor Drive_ Temporary Source: ___Yes _X_No

Manufacturer: _Solar Turbines, Inc._ Model No.: _Saturn 1200_

Serial Number: _OHC18-S4468_ Installation Date____/____/_1989_

Boiler Type: ___ Industrial boiler ___ Process burner ___ Electric utility boiler

Other (describe) ____

Boiler horsepower rating__________________ Boiler steam flow (lb/hr)________________

Type of Fuel-Burning Equipment (coal burning only):

___ Hand fired ___Spreader stoker ___Underfeed stoker ___Overfeed stoker

___ Traveling grate ___Shaking grate ___Pulverized, wet bed ___ Pulverized, dry bed

Actual Heat Input ___MM BTU/hr Max. Design Heat Input _10.84_MM BTU/hr

C. Fuel Data

Primary fuel type(s): Natural Gas Standby fuel type(s): Not Applicable

Describe each fuel you expected to use during the term of the permit.

Fuel Type	Max. Sulfur Content (%)	Max. Ash Content (%)	BTU Value (cf, gal., or lb.)
Natural Gas	Negligible	Negligible	900 Btu/cf

D. Fuel Usage Rates

Fuel Type	Annual Actual Usage	Maximum Usage	
		Hourly	Annual
Natural Gas	105.51 MMscf	12,044 scf	105.51 MMscf

E. Associated Air Pollution Control Equipment – Not Applicable

Emissions unit ID_____________ Device type____

Air pollutant(s) Controlled____________________ Manufacturer___________________________

Model No.________________________ Serial No.________________________

Installation date_____/_____/_________ Control efficiency (%) _____________

Efficiency estimation method____

F. Ambient Impact Assessment – Not Applicable

This information must be completed by temporary sources or when ambient impact assessment is an applicable requirement for this emissions unit (this is not common).

Stack height (ft) ___________._____ Inside stack diameter (ft) __________._____

Stack temp (°F) ___________._____ Design stack flow rate (ACFM) ___________.____

Actual stack flow rate (ACFM) _____________.____ Velocity (ft/sec) _____________.________

United States Environmental Protection Agency

OMB No. 2060-0336, Expires 11/30/2022

Federal Operating Permit Program (40 CFR Part 71)
EMISSION UNIT DESCRIPTION FOR FUEL COMBUSTION SOURCES (EUD-1)

A. General Information

Emissions unit ID: _3_ Description: _Scania DS11_

SIC Code (4-digit): _1389_ SCC Code_20200102_

B. Emissions Unit Description

Primary use: _Emergency Generator Engine_ Temporary Source: ___Yes _X_No

Manufacturer: _Waukesha - Scania_ Model No.: _F674DSU - DS11A06_

Serial Number: _951674_ Installation Date____/____/_2019_

Boiler Type: ___ Industrial boiler ___ Process burner ___ Electric utility boiler

Other (describe) ____

Boiler horsepower rating__________________ Boiler steam flow (lb/hr)________________

Type of Fuel-Burning Equipment (coal burning only):

___ Hand fired ___Spreader stoker ___Underfeed stoker ___Overfeed stoker

___ Traveling grate ___Shaking grate ___Pulverized, wet bed ___ Pulverized, dry bed

Actual Heat Input ___MM BTU/hr Max. Design Heat Input _0.69_MM BTU/hr

C. Fuel Data

Primary fuel type(s): Diesel Standby fuel type(s): Not Applicable

Describe each fuel you expected to use during the term of the permit.

Fuel Type	Max. Sulfur Content (%)	Max. Ash Content (%)	BTU Value (cf, gal., or lb.)
Diesel	≤0.0015%	Unknown	138,000 Btu/gal

D. Fuel Usage Rates

Fuel Type	Annual Actual Usage	Maximum Usage	
		Hourly	Annual
Diesel	2,500 gal	5 gal	2,500 gal

E. Associated Air Pollution Control Equipment – Not Applicable

Emissions unit ID_____________ Device type____

Air pollutant(s) Controlled____________________ Manufacturer__________________________

Model No.________________________ Serial No.________________________

Installation date_____/_____/_________ Control efficiency (%) _____________

Efficiency estimation method____

F. Ambient Impact Assessment – Not Applicable

This information must be completed by temporary sources or when ambient impact assessment is an applicable requirement for this emissions unit (this is not common).

Stack height (ft) ___________._____ Inside stack diameter (ft) __________._____

Stack temp (^oF) ___________._____ Design stack flow rate (ACFM) ___________.____

Actual stack flow rate (ACFM) _____________.____ Velocity (ft/sec) _____________._______

United States Environmental Protection Agency

OMB No. 2060-0336, Expires 11/30/2022

Federal Operating Permit Program (40 CFR Part 71)

EMISSIONS UNIT DESCRIPTION FOR VOC EMITTING SOURCES (EUD-2)

A. General Information

Emissions unit ID _SSM_ Description _Startup, Shutdown & Maintenance_

SIC Code (4-digit) _1389_ SCC Code _2310021803_

B. Emissions Unit Description

Equipment type _SSM Emissions._ Temporary source: ___ Yes _X_ No

Manufacturer _N/A_ Model No. _N/A_

Serial No. _N/A_ Installation date _N/A_

Articles being coated or degreased _N/A_

Application method _N/A_

Overspray (surface coating) (%) _N/A_ Drying method _N/A_

No. of dryers _N/A_ Tank capacity (degreasers) (gal) _N/A_

C. Associated Air Pollution Control Equipment – Not Applicable

Emissions unit ID ___________ Device Type ____________________________________

Manufacturer ________________________ Model No ____________________________

Serial No. ______________________________ Installation date ____/____/_________

Control efficiency (%) _________.___ Capture efficiency (%) ________.___

Air pollutant(s) controlled______________ Efficiency estimation method _______________

D. Ambient Impact Assessment – Not Applicable

This information must be completed by temporary sources or when ambient impact assessment is an applicable requirement for this emissions unit (this is not common).

Stack height (ft) __________._____ Inside stack diameter (ft) _________._____

Stack temp (F) __________._____ Design stack flow rate (ACFM) __________.____

Actual stack flow rate (ACFM) _______________ Velocity (ft/sec) ___________.________

E. VOC-containing Substance Data

List each VOC-containing substance consumed, processed or produced at the emissions unit that is emitted into the air. In the name column, if providing a brand name, include the name of the manufacture; if the substance contains HAP, list the constituent HAP.

Substance Name (Chemical, Brand Name)	CAS No.	Substance Type	Actual Usage (gal/yr)	Max Usage (gal/day)	Max Usage (gal/year)	VOC Content (lb/gal)
Natural Gas	N/A	Natural Gas	N/A	N/A	N/A	N/A

United States Environmental Protection Agency

OMB No. 2060-0336, Expires 11/30/2022

Federal Operating Permit Program (40 CFR Part 71)

EMISSIONS UNIT DESCRIPTION FOR VOC EMITTING SOURCES (EUD-2)

A. General Information

Emissions unit ID _F1_ Description _Piping Component Fugitive Emissions_

SIC Code (4-digit) _1389_ SCC Code _2310021509_

B. Emissions Unit Description

Equipment type _Valves, Flanges, Seals, etc._ Temporary source: ___ Yes _X_ No

Manufacturer _Unknown_ Model No. _Unknown_

Serial No. _Unknown_ Installation date _Unknown_

Articles being coated or degreased _N/A_

Application method _N/A_

Overspray (surface coating) (%) _N/A_ Drying method _N/A_

No. of dryers _N/A_ Tank capacity (degreasers) (gal) _N/A_

C. Associated Air Pollution Control Equipment – Not Applicable

Emissions unit ID ___________ Device Type ____________________________________

Manufacturer ________________________ Model No____________________________

Serial No. ______________________________ Installation date ____/____/_________

Control efficiency (%) _________.___ Capture efficiency (%) ________.___

Air pollutant(s) controlled______________ Efficiency estimation method _______________

D. Ambient Impact Assessment – Not Applicable

This information must be completed by temporary sources or when ambient impact assessment is an applicable requirement for this emissions unit (this is not common).

Stack height (ft) __________._____ Inside stack diameter (ft) _________._____

Stack temp (F) __________._____ Design stack flow rate (ACFM) __________.____

Actual stack flow rate (ACFM) _______________ Velocity (ft/sec) ___________.________

E. VOC-containing Substance Data

List each VOC-containing substance consumed, processed or produced at the emissions unit that is emitted into the air. In the name column, if providing a brand name, include the name of the manufacture; if the substance contains HAP, list the constituent HAP.

Substance Name (Chemical, Brand Name)	CAS No.	Substance Type	Actual Usage (gal/yr)	Max Usage (gal/day)	Max Usage (gal/year)	VOC Content (lb/gal)
Natural Gas	N/A	Natural Gas	N/A	N/A	N/A	N/A

United States Environmental Protection Agency

OMB No. 2060-0336, Expires 11/30/2022

Federal Operating Permit Program (40 CFR Part 71)

EMISSIONS UNIT DESCRIPTION FOR VOC EMITTING SOURCES (EUD-2)

A. General Information

Emissions unit ID _T1_ Description _400-bbl Condensate Storage Tank_

SIC Code (4-digit) _1389_ SCC Code _2310021010_

B. Emissions Unit Description

Equipment type _Condensate Storage Tank_ Temporary source: ___ Yes _X_ No

Manufacturer _American Tank & Steel_ Model No. _N/A_

Serial No. _2874_ Installation date _Unknown (Manufacture Date 06/1965)_

Articles being coated or degreased _N/A_

Application method _N/A_

Overspray (surface coating) (%) _N/A_ Drying method _N/A_

No. of dryers _N/A_ Tank capacity (degreasers) (gal) _N/A_

C. Associated Air Pollution Control Equipment – Not Applicable

Emissions unit ID ___________ Device Type____________________________________

Manufacturer ________________________ Model No_____________________________

Serial No. ______________________________ Installation date ____/____/_________

Control efficiency (%) _________.___ Capture efficiency (%) ________.___

Air pollutant(s) controlled______________ Efficiency estimation method _______________

D. Ambient Impact Assessment – Not Applicable

This information must be completed by temporary sources or when ambient impact assessment is an applicable requirement for this emissions unit (this is not common).

Stack height (ft) __________._____ Inside stack diameter (ft) _________._____

Stack temp (F) __________._____ Design stack flow rate (ACFM) __________.____

Actual stack flow rate (ACFM) _______________ Velocity (ft/sec) ___________._______

E. VOC-containing Substance Data

List each VOC-containing substance consumed, processed or produced at the emissions unit that is emitted into the air. In the name column, if providing a brand name, include the name of the manufacture; if the substance contains HAP, list the constituent HAP.

Substance Name (Chemical, Brand Name)	CAS No.	Substance Type	Actual Usage (gal/yr)	Max Usage (gal/day)	Max Usage (gal/year)	VOC Content (lb/gal)
Natural Gas Condensate	N/A	Natural Gas Condensate	N/A	2,548	929,922	≈5.7

United States Environmental Protection Agency

OMB No. 2060-0336, Expires 11/30/2022

Federal Operating Permit Program (40 CFR Part 71)

EMISSIONS UNIT DESCRIPTION FOR VOC EMITTING SOURCES (EUD-2)

A. General Information

Emissions unit ID _T2_ Description _400 bbl Condensate Storage Tank_

SIC Code (4-digit) _1389_ SCC Code _2310021010_

B. Emissions Unit Description

Equipment type _Condensate Storage Tank_ Temporary source: ___ Yes _X_ No

Manufacturer _American Tank & Steel_ Model No. _N/A_

Serial No. _831-2918_ Installation date _2014 (Manufacture Date 1965)_

Articles being coated or degreased _N/A_

Application method _N/A_

Overspray (surface coating) (%) _N/A_ Drying method _N/A_

No. of dryers _N/A_ Tank capacity (degreasers) (gal) _N/A_

C. Associated Air Pollution Control Equipment – Not Applicable

Emissions unit ID ___________ Device Type ____________________________________

Manufacturer ________________________ Model No____________________________

Serial No. ______________________________ Installation date ____/____/_________

Control efficiency (%) _________.___ Capture efficiency (%) ________.___

Air pollutant(s) controlled______________ Efficiency estimation method _______________

D. Ambient Impact Assessment – Not Applicable

This information must be completed by temporary sources or when ambient impact assessment is an applicable requirement for this emissions unit (this is not common).

Stack height (ft) __________._____ Inside stack diameter (ft) _________._____

Stack temp (F) __________._____ Design stack flow rate (ACFM) __________.____

Actual stack flow rate (ACFM) _______________ Velocity (ft/sec) ___________.________

E. VOC-containing Substance Data

List each VOC-containing substance consumed, processed or produced at the emissions unit that is emitted into the air. In the name column, if providing a brand name, include the name of the manufacture; if the substance contains HAP, list the constituent HAP.

Substance Name (Chemical, Brand Name)	CAS No.	Substance Type	Actual Usage (gal/yr)	Max Usage (gal/day)	Max Usage (gal/year)	VOC Content (lb/gal)
Natural Gas Condensate	N/A	Natural Gas Condensate	N/A	1,274	464,961	≈5.7

United States Environmental Protection Agency

OMB No. 2060-0336, Expires 11/30/2022

Federal Operating Permit Program (40 CFR Part 71)

EMISSIONS UNIT DESCRIPTION FOR VOC EMITTING SOURCES (EUD-2)

A. General Information

Emissions unit ID _L1_ Description _Condensate Truck Loading _

SIC Code (4-digit) _1389_ SCC Code _2310021030_

B. Emissions Unit Description

Equipment type _Condensate Truck Loading_ Temporary source: ___ Yes _X_ No

Manufacturer _N/A_ Model No. _N/A _

Serial No. _N/A _ Installation date _N/A _

Articles being coated or degreased _N/A_

Application method _N/A_

Overspray (surface coating) (%) _N/A_ Drying method _N/A_

No. of dryers _N/A_ Tank capacity (degreasers) (gal) _N/A_

C. Associated Air Pollution Control Equipment – Not Applicable

Emissions unit ID ___________ Device Type____________________________________

Manufacturer ________________________ Model No____________________________

Serial No. ______________________________ Installation date ____/____/_________

Control efficiency (%) _________.___ Capture efficiency (%) ________.___

Air pollutant(s) controlled______________ Efficiency estimation method _______________

D. Ambient Impact Assessment – Not Applicable

This information must be completed by temporary sources or when ambient impact assessment is an applicable requirement for this emissions unit (this is not common).

Stack height (ft) __________._____ Inside stack diameter (ft) _________._____

Stack temp (F) __________._____ Design stack flow rate (ACFM) __________.____

Actual stack flow rate (ACFM) _______________ Velocity (ft/sec) ___________.________

E. VOC-containing Substance Data

List each VOC-containing substance consumed, processed or produced at the emissions unit that is emitted into the air. In the name column, if providing a brand name, include the name of the manufacture; if the substance contains HAP, list the constituent HAP.

Substance Name (Chemical, Brand Name)	CAS No.	Substance Type	Actual Usage (gal/yr)	Max Usage (gal/day)	Max Usage (gal/year)	VOC Content (lb/gal)
Natural Gas Condensate	N/A	Natural Gas Condensate	N/A	2,548	929,922	≈5.7

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Federal Operating Permit Program (40 CFR Part 71)

INSIGNIFICANT EMISSIONS (IE)

On this page list each insignificant activity or emission unit. In the "number" column, indicate the number of units in this category. Descriptions should be brief but unique. Indicate which emissions criterion of part 71 is the basis for the exemption.

Number	Description of Activities or Emissions Units	RAP (except HAP)	HAP
4	Fuel Gas Heater (0.3 MMBtu/hr)	X	X
5	Tank Heater (0.012 MMBtu/hr)	X	X
PL	Pig Launcher	X	X
PR	Pig Receiver	X	X
T3	Produced Water Storage Tank (70 bbl)	X	X
L2	Truck Loading (Produced Water)	X	X
T4	Lube Oil Storage Tank (500 gal)	X	X
T5	Lube Oil Storage Tank (500 bbl)	X	X
T6	Ambitrol Storage Tank (350 gal)	X	X
T7	Methanol Storage Tank (500 gal)	X	X

United States Environmental Protection Agency

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Federal Operating Permit Program (40 CFR Part 71)
EMISSION CALCULATIONS (EMISS)

Calculate potential to emit (PTE) for applicability purposes and actual emissions for fee purposes for each emissions unit, control device, or alternative operating scenario identified in section I of form **GIS**. If form **FEE** does not need to be submitted with the application, do not calculate actual emissions.

A. Emissions Unit ID _1_

B. Identification and Quantification of Emissions

For each emissions unit identified above, list each regulated air pollutant or other pollutant for which the source is major, then list any other regulated pollutant (for fee calculation) not already listed. HAP may be simply listed as "HAP." Next, calculate PTE for applicability purposes and actual emissions for fee purposes for each pollutant. Do not calculate PTE for air pollutants listed solely for fee purposes. Include all fugitives for fee purposes. See instructions concerning GHGs. Values should be reported to the nearest tenth (0.1) of a ton for yearly values or tenth (0.1) of a pound for hourly values.

Air Pollutants	Emission Rates			CAS No.
	Actual Annual Emissions (tons/yr)	Potential to Emit		
		Hourly (lb/hr)	Annual (tons/yr)	
NO2	19.3	4.4	19.3	
CO	11.4	2.6	11.4	
VOC	0.4	0.1	0.4	
SO2	0.2	--	0.2	
TSP	0.3	0.1	0.3	
PM10	0.3	0.1	0.3	
PM2.5	0.3	0.1	0.3	
Acetaldehyde	--	--	0.2	75070
Formaldehyde	--	--	0.2	50000
Total HAPs	--	0.1	0.5	
CO2	--	--	5544.6	
CH4	--	--	0.1	

United States Environmental Protection Agency

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Federal Operating Permit Program (40 CFR Part 71)
EMISSION CALCULATIONS (EMISS)

Calculate potential to emit (PTE) for applicability purposes and actual emissions for fee purposes for each emissions unit, control device, or alternative operating scenario identified in section I of form **GIS**. If form **FEE** does not need to be submitted with the application, do not calculate actual emissions.

A. Emissions Unit ID 3

B. Identification and Quantification of Emissions

For each emissions unit identified above, list each regulated air pollutant or other pollutant for which the source is major, then list any other regulated pollutant (for fee calculation) not already listed. HAP may be simply listed as "HAP." Next, calculate PTE for applicability purposes and actual emissions for fee purposes for each pollutant. Do not calculate PTE for air pollutants listed solely for fee purposes. Include all fugitives for fee purposes. See instructions concerning GHGs. Values should be reported to the nearest tenth (0.1) of a ton for yearly values or tenth (0.1) of a pound for hourly values.

Air Pollutants	Emission Rates			CAS No.
	Actual Annual Emissions (tons/yr)	Potential to Emit		
		Hourly (lb/hr)	Annual (tons/yr)	
NO2	0.2	3.0	0.8	
CO	--	0.7	0.2	
VOC	--	0.2	0.1	
SO2	--	0.2	0.1	
TSP	--	0.2	0.1	
PM10	--	0.2	0.1	
PM2.5	--	0.2	0.1	
Total HAPs	--	--	--	
CO2	--	--	31.2	
CH4	--	--	--	

United States Environmental Protection Agency

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Federal Operating Permit Program (40 CFR Part 71)
EMISSION CALCULATIONS (EMISS)

Calculate potential to emit (PTE) for applicability purposes and actual emissions for fee purposes for each emissions unit, control device, or alternative operating scenario identified in section I of form **GIS**. If form **FEE** does not need to be submitted with the application, do not calculate actual emissions.

A. Emissions Unit ID SSM

B. Identification and Quantification of Emissions

For each emissions unit identified above, list each regulated air pollutant or other pollutant for which the source is major, then list any other regulated pollutant (for fee calculation) not already listed. HAP may be simply listed as "HAP." Next, calculate PTE for applicability purposes and actual emissions for fee purposes for each pollutant. Do not calculate PTE for air pollutants listed solely for fee purposes. Include all fugitives for fee purposes. See instructions concerning GHGs. Values should be reported to the nearest tenth (0.1) of a ton for yearly values or tenth (0.1) of a pound for hourly values.

Air Pollutants	Emission Rates			CAS No.
	Actual Annual Emissions (tons/yr)	Potential to Emit		
		Hourly (lb/hr)	Annual (tons/yr)	
VOC	0.0	--	11.9	
n-Hexane	--	--	0.3	110543
Total HAPs	--	--	0.3	
CO2	--	--	0.9	
CH4	--	--	30.3	

United States Environmental Protection Agency

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Federal Operating Permit Program (40 CFR Part 71)
EMISSION CALCULATIONS (EMISS)

Calculate potential to emit (PTE) for applicability purposes and actual emissions for fee purposes for each emissions unit, control device, or alternative operating scenario identified in section I of form **GIS**. If form **FEE** does not need to be submitted with the application, do not calculate actual emissions.

A. Emissions Unit ID F1

B. Identification and Quantification of Emissions

For each emissions unit identified above, list each regulated air pollutant or other pollutant for which the source is major, then list any other regulated pollutant (for fee calculation) not already listed. HAP may be simply listed as "HAP." Next, calculate PTE for applicability purposes and actual emissions for fee purposes for each pollutant. Do not calculate PTE for air pollutants listed solely for fee purposes. Include all fugitives for fee purposes. See instructions concerning GHGs. Values should be reported to the nearest tenth (0.1) of a ton for yearly values or tenth (0.1) of a pound for hourly values.

Air Pollutants	Emission Rates			CAS No.
	Actual Annual Emissions (tons/yr)	Potential to Emit		
		Hourly (lb/hr)	Annual (tons/yr)	
VOC	3.9	0.9	3.9	
Total HAPs	--	--	0.1	
CO2	--	--	0.2	
CH4	--	--	5.6	

United States Environmental Protection Agency

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Federal Operating Permit Program (40 CFR Part 71)
EMISSION CALCULATIONS (EMISS)

Calculate potential to emit (PTE) for applicability purposes and actual emissions for fee purposes for each emissions unit, control device, or alternative operating scenario identified in section I of form **GIS**. If form **FEE** does not need to be submitted with the application, do not calculate actual emissions.

A. Emissions Unit ID _T1_

B. Identification and Quantification of Emissions

For each emissions unit identified above, list each regulated air pollutant or other pollutant for which the source is major, then list any other regulated pollutant (for fee calculation) not already listed. HAP may be simply listed as "HAP." Next, calculate PTE for applicability purposes and actual emissions for fee purposes for each pollutant. Do not calculate PTE for air pollutants listed solely for fee purposes. Include all fugitives for fee purposes. See instructions concerning GHGs. Values should be reported to the nearest tenth (0.1) of a ton for yearly values or tenth (0.1) of a pound for hourly values.

Air Pollutants	Emission Rates			CAS No.
	Actual Annual Emissions (tons/yr)	Potential to Emit		
		Hourly (lb/hr)	Annual (tons/yr)	
VOC	7.1	--	115.6	
Benzene	--	--	0.5	71432
n-Hexane	0.6	--	11.7	110543
Toluene	--	--	0.3	108883
Total HAPs	0.6	--	12.5	
CO2	--	--	0.7	
CH4	--	--	10.7	

United States Environmental Protection Agency

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Federal Operating Permit Program (40 CFR Part 71)
EMISSION CALCULATIONS (EMISS)

Calculate potential to emit (PTE) for applicability purposes and actual emissions for fee purposes for each emissions unit, control device, or alternative operating scenario identified in section I of form **GIS**. If form **FEE** does not need to be submitted with the application, do not calculate actual emissions.

A. Emissions Unit ID T2

B. Identification and Quantification of Emissions

For each emissions unit identified above, list each regulated air pollutant or other pollutant for which the source is major, then list any other regulated pollutant (for fee calculation) not already listed. HAP may be simply listed as "HAP." Next, calculate PTE for applicability purposes and actual emissions for fee purposes for each pollutant. Do not calculate PTE for air pollutants listed solely for fee purposes. Include all fugitives for fee purposes. See instructions concerning GHGs. Values should be reported to the nearest tenth (0.1) of a ton for yearly values or tenth (0.1) of a pound for hourly values.

Air Pollutants	Emission Rates			CAS No.
	Actual Annual Emissions (tons/yr)	Potential to Emit		
		Hourly (lb/hr)	Annual (tons/yr)	
VOC	1.6	--	5.0	
n-Hexane	0.1	--	0.7	110543
Total HAPs	0.2	--	0.7	

United States Environmental Protection Agency

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Federal Operating Permit Program (40 CFR Part 71)
EMISSION CALCULATIONS (EMISS)

Calculate potential to emit (PTE) for applicability purposes and actual emissions for fee purposes for each emissions unit, control device, or alternative operating scenario identified in section I of form **GIS**. If form **FEE** does not need to be submitted with the application, do not calculate actual emissions.

A. Emissions Unit ID L1

B. Identification and Quantification of Emissions

For each emissions unit identified above, list each regulated air pollutant or other pollutant for which the source is major, then list any other regulated pollutant (for fee calculation) not already listed. HAP may be simply listed as "HAP." Next, calculate PTE for applicability purposes and actual emissions for fee purposes for each pollutant. Do not calculate PTE for air pollutants listed solely for fee purposes. Include all fugitives for fee purposes. See instructions concerning GHGs. Values should be reported to the nearest tenth (0.1) of a ton for yearly values or tenth (0.1) of a pound for hourly values.

Air Pollutants	Emission Rates			CAS No.
	Actual Annual Emissions (tons/yr)	Potential to Emit		
		Hourly (lb/hr)	Annual (tons/yr)	
VOC	**0.3**	**--**	**2.5**	
n-Hexane	**--**	**--**	**0.3**	**110543**
Total HAPs	**--**	**--**	**0.4**	

United States Environmental Protection Agency

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Federal Operating Permit Program (40 CFR Part 71)

POTENTIAL TO EMIT (PTE)

For each emissions unit at the facility, list the unit ID and the PTE of each air pollutant listed below and sum the values to determine the total PTE for the facility. It may be helpful to complete form **EMISS** before completing this form. Report each pollutant at each unit to the nearest tenth (0.1) of a ton; values may be reported with greater precision (i.e., more decimal places) if desired. Report facility total PTE for each listed pollutant on this form and in section **J** of form **GIS**. The HAP column is for the PTE of all HAPs for each unit. You may use an attachment to show any pollutants that may be present in major amounts that are not already listed on the form (this is not common).

Emissions Unit ID	Regulated Air Pollutants and Pollutants for which Source is Major (PTE in tons/yr)						
	NOx	VOC	SO2	PM10	CO	Lead	HAP
1	19.3	0.4	0.2	0.3	11.4	0.0	0.5
3	0.8	0.1	0.0	0.1	0.2	0.0	0.0
SSM		11.9					0.3
F1		3.9					0.1
T1		115.6					12.5
T2		5.0					0.7
L1		2.5					0.4
FACILITY TOTALS:	**20.2**	**140.9**	**0.2**	**0.4**	**11.7**	**0.0**	**14.6**

Section 2

Description of the Routine Operation of the Facility

The following description of operations at the facility was taken from Revision 1 of the application.

The Los Mestenios Compressor Station is located in northwestern New Mexico, within the boundaries of the Jicarilla Apache Reservation, and therefore falls within the jurisdiction of United States Environmental Protection Agency, Region 6. The facility compresses natural gas for pipeline transmission. The natural gas is received from pipelines that are fed by upstream natural gas wells.

Once at the facility, the natural gas passes through the liquids receiver (VR-1013) and then through the inlet suction scrubber (VSC-1022). There are no emissions from these vessels. Their purpose is to separate liquids from the natural gas stream. Liquids are separated from the gas stream in both vessels and sent to the facility condensate tank (T-1023), which can then overflow into the second facility condensate tank (T-1024), if needed. Flash emissions will occur in the first tank where the liquid is discharged and working and breathing emissions will occur from both tanks. All tank emissions are vented to atmosphere, as there are currently no applicable requirements to control tank emissions at the facility. Water is separated off the condensate and drained into the facility's produced water tank. Liquids are removed from the facility via truck. There are loadout emissions associated with this action. During the winter months, a small tank heater is used to prevent the liquids in the tanks from freezing. There are a small amount of combustion emissions associated with this unit.

After the natural gas passes through the inlet suction scrubber (VSC-1022), it is compressed by the Solar Turbine (GT-1031) from approximately 95 psi to 210 psi (this is the primary purpose of the turbine). The turbine fires natural gas that is heated with a fuel gas heater during the winter months to prevent any condensables from freezing. There are a small amount of combustion emissions associated with the fuel gas heater. The turbine does not have any emission controls and emits to atmosphere. After compression, the gas passes through the facility discharge cooler (AC-1021) before exiting the facility and being discharged to Harvest's Dogie Compressor Station. There are no emissions associated with the discharge cooler.

There is also a pig launcher (VR-1014) and pig receiver (VR-1011) located within a quarter mile of the facility. Pigs are launched in pipelines to clean out any buildups of liquid and other material in the pipe. There are small amounts of emissions when a pig is launched and when a pig is received. Emissions are dependent on the volume of the launcher/receiver. Multiple pigs can be caught in a receiver before it is opened and vents emissions to atmosphere, so not every pig receiving event results in emissions. For the pigs that are received at Los Mestenios, smaller diameter pigs are used in one pipeline and drop into a different larger pipeline. The pig used in this larger pipeline then pushes the smaller pigs into the facility receiver. So multiple pigs are caught in the receiver simultaneously, resulting in the receiver only being opened once for multiple pigs. This common industry practice reduces emissions by limiting how many times the receiver is opened. Liquids from the pigging operations are sent to the condensate storage tanks. Any flash emissions that might occur are accounted for in the condensate tank flash emission calculations.

An emergency diesel powered generator engine provides electricity to the site if the facility loses power.

Methanol is injected into the natural gas stream to prevent pipeline freezes in the winter. Methanol works as an anti-freeze by joining with the natural gas and water vapor to lower the freezing point of the vapor. The Ambitrol tank contains anti-freeze.

Section 3

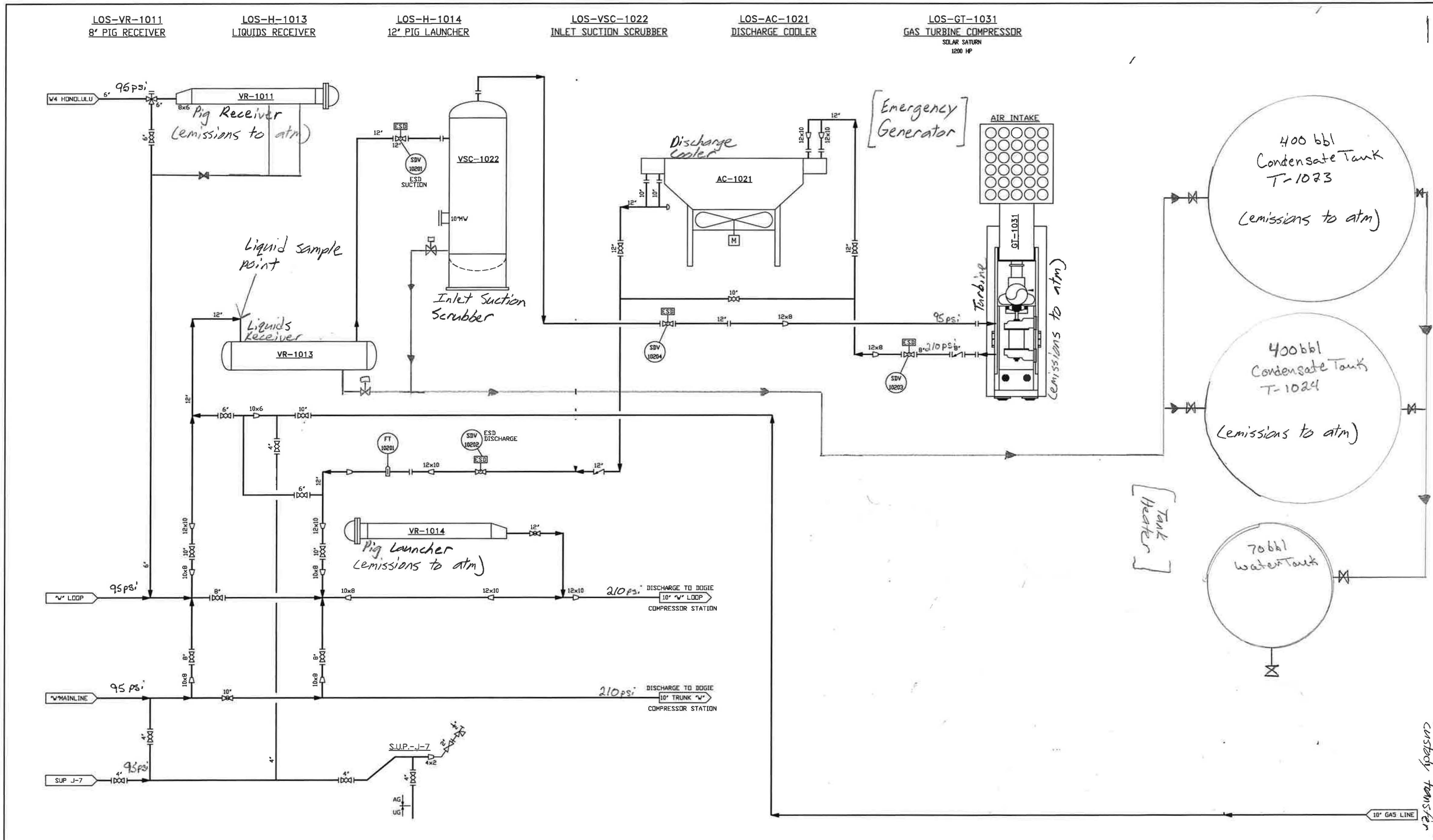
Process Flow Sheet

A process flow sheet is provided in this section. It has been updated to incorporate suggestions made by EPA. Please see the following page.

Response to EPA request for additional information:

- Revise process flow diagram to not include equipment that is out of service or decommissioned, and also submit documentation that this equipment is no longer an option for the facility. Usually when an operator has decommissioned equipment and wants to prove emission reductions, EPA requires proof that the supposedly decommissioned units are disconnected from the process and, if still on site, unable to be connected back up to the process and become emission units without significant reconstruction, requiring first evaluation for necessary pre-construction permitting. In fact, unless equipment has been removed from the site, we do not consider it "decommissioned," but rather disconnected from the process and no longer an emission unit. To prove Harvest could provide photos of the disconnection (e.g., piping removed and blind flanged) and a project work order (or equivalent), ***accompanied by a signed statement by the person responsible for CAA compliance***.

The process flow sheet submitted with Revision 1 of the application has been revised so as to exclude equipment that is out of service or decommissioned. Photographs were previously provided to EPA showing that the engine has been disconnected. They are included in Section 8. The certification of this application by the responsible official constitutes a signed statement declaring the unit is no longer in service.



NOTES:

Turbine Install 1984
Cat Install 1990

DRAWING NO.	TITLE
	REFERENCE DRAWINGS

REV	DESCRIPTION	DRAWN BY	DATE REVISED	CHECKED BY	PROJECT ENG.	APPROVED BY
1	UPDATED WITH HARVEST BORDER BLOCK	T. GOOSSEN	4/11/2022			
0	NEW DWG. PER P&ID WALKDOWN (APRIL '10)	BL	2/20/10			

REVISIONS

HARVEST MIDSTREAM

H4C Office
1755 Arroyo Drive
Bloomfield, NM 87413

LOS MESTENIOS COMPRESSOR STATION
PROCESS FLOW DIAGRAM

RIO ARRIBA COUNTY — NEW MEXICO

DRAWN BY: BL — SCALE: NONE — A.F.E.: N/A
CHECKED BY:
PROJECT ENG.:
APPROVED BY:
DATE ISSUED: 5/20/10

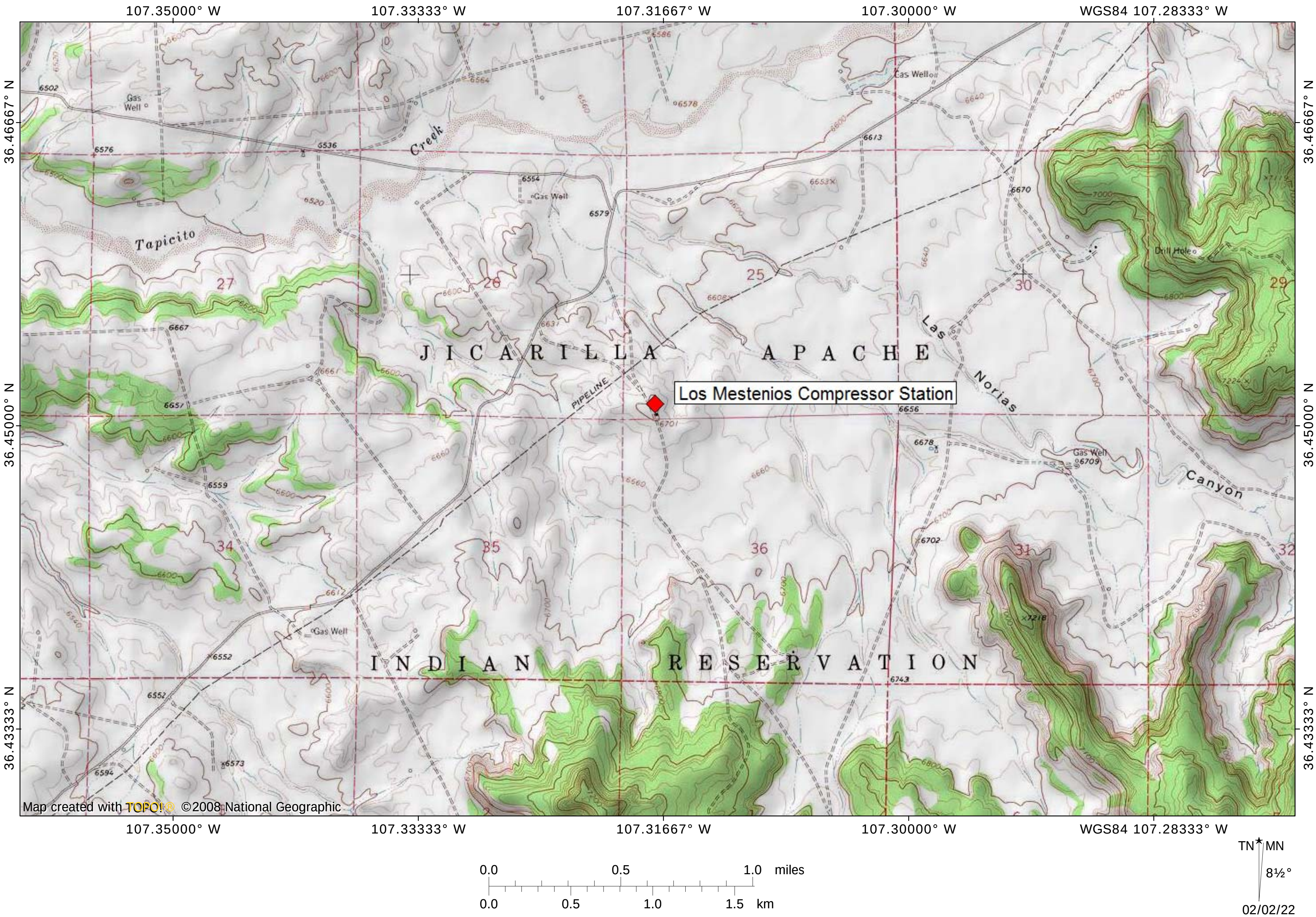
LOS-P02-001 — 1

Section 4

Topographic Map

A topographic map is provided in this section. Please see the following page.

HARVEST FOUR CORNERS, LLC - LOS MESTENIOS COMPRESSOR STATION - Jicarilla Apache Reservation, Rio Arriba Co., NM T 26 N, R 05 W, Sec. 25/36



Section 5

Emission Calculations

General

Per EPA's request in an October 24th meeting, Harvest is providing a more detailed written explanation of the methodologies used to calculate emissions. Where changes have been made to the calculations, explanations are provided.

Note that this Section 5 is divided into 12 subsections: Turbine, Generator, Startup, Shutdown & Maintenance, Equipment Leaks, Condensate Storage Tanks, Condensate Truck Loading, Heaters, Pig Launcher & Receiver, Produced Water Storage Tanks, Produced Water Truck Loading, Miscellaneous Tanks, and GHG Emissions. Each of the 12 subparts begins with a written description of the calculations. Then PTE emissions calculations are provided. Finally, for significant source types, actual emissions calculations are provided.

This general section provides tables summarizing both the PTE and actual emissions calculations from the other subsections.

In each of the 12 subsections, supporting documentation for the calculations is provided with the PTE emissions calculations.

Response to EPA request for additional information:

- Provide in the new application the methodologies throughout used to calculate PTE for each emission. Provide the model inputs i.e., characterization of the analysis as it is entered into the model and a characterization of the model outputs. Provide example calculation with the methodology used to calculate the pollutants emission rate that results in the total facility's PTE. Provide all utilized methodologies and equations, assumptions, emission factors used for the emissions calculation. Information should allow for the public to follow and understand.

In both the original application submitted in February 2022 and Revision 1 of the application submitted in September 2022, Harvest provided detailed calculations for all equipment. They identified the methodologies used, input and output data, emission factors, assumptions, equations used, etc. This application contains those same calculations, with any changes as noted in the descriptions in the various subsections.

Response to EPA request for additional information:

- Include the methodology/equations used to calculate the emissions for each emission unit with an example calculation of how the methodology is used.

See the response above.

Response to EPA request for additional information:

- The Excel spreadsheets used to calculate the Facility emissions.

Two Excel workbooks are being provided with this revision of the application: one for the PTE calculations and one for the actual calculations.

Facility Total PTE
Emissions (Criteria Pollutants)

Company: **Harvest Four Corners, LLC**
Facility: **Los Mestenios Compressor Station**
Date / Rev: **November 2022 / Rev 2**

Unit Number	Description	NOX, pph	NOX, tpy	CO, pph	CO, tpy	VOC, pph	VOC, tpy	SOX, pph	SOX, tpy	TSP, pph	TSP, tpy	PM10, pph	PM10, tpy	PM2.5, pph	PM2.5, tpy
1	Solar Saturn T1200	4.41	19.30	2.60	11.40	9.13E-02	4.00E-01	3.69E-02	1.61E-01	7.15E-02	3.13E-01	7.15E-02	3.13E-01	7.15E-02	3.13E-01
3	Scania DS11	3.04	7.61E-01	6.56E-01	1.64E-01	2.48E-01	6.21E-02	2.00E-01	5.00E-02	2.14E-01	5.35E-02	2.14E-01	5.35E-02	2.14E-01	5.35E-02
SSM	SSM	-	-	-	-	-	11.88	-	-	-	-	-	-	-	-
F1	Leaks	-	-	-	-	8.79E-01	3.85	-	-	-	-	-	-	-	-
T1	Condensate Tank - 400 bbl	-	-	-	-	-	115.61	-	-	-	-	-	-	-	-
T2	Condensate Tank - 400 bbl	-	-	-	-	-	4.97	-	-	-	-	-	-	-	-
L1	Truck Loading (Condensate)	-	-	-	-	-	2.49	-	-	-	-	-	-	-	-
4	Fuel Gas Heater	3.33E-02	1.46E-01	2.80E-02	1.23E-01	1.83E-03	8.03E-03	2.00E-04	8.76E-04	2.53E-03	1.11E-02	2.53E-03	1.11E-02	2.53E-03	1.11E-02
5	Tank Heater	1.33E-03	5.84E-03	1.12E-03	4.91E-03	7.33E-05	3.21E-04	8.00E-06	3.50E-05	1.01E-04	4.44E-04	1.01E-04	4.44E-04	1.01E-04	4.44E-04
PL	Pig Launcher	-	-	-	-	-	2.84E-01	-	-	-	-	-	-	-	-
PR	Pig Reciever	-	-	-	-	-	1.23	-	-	-	-	-	-	-	-
T3	Produced H2O Tank - 70 bbl	-	-	-	-	-	1.10E-01	-	-	-	-	-	-	-	-
L2	Truck Loading (Produced H2O)	-	-	-	-	-	1.38E-03	-	-	-	-	-	-	-	-
T4	Lube Oil Tank - 500 gal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T5	Used Oil Tank - 500 gal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T6	Ambitrol Tank - 350 gal	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T7	Methanol Tank - 500 gal	-	-	-	-	-	2.24E-02	-	-	-	-	-	-	-	-
	Total	7.48	20.21	3.29	11.69	1.22	140.92	2.37E-01	2.12E-01	2.88E-01	3.78E-01	2.88E-01	3.78E-01	2.88E-01	3.78E-01

Facility Total PTE Emissions (HAPs)

Company: **Harvest Four Corners, LLC**
Facility: **Los Mestenios Compressor Station**
Date / Rev: **November 2022 / Rev 2**

Unit Number	Description	Total HAPs, pph	Total HAPs, tpy	1,3-Butadiene, pph	1,3-Butadiene, tpy	Acetaldehyde, pph	Acetaldehyde, tpy	Acrolein, pph	Acrolein, tpy	Benzene, pph	Benzene, tpy
1	Solar Saturn T1200	1.04E-01	4.55E-01	1.60E-04	7.00E-04	4.34E-02	1.90E-01	6.39E-04	2.80E-03	1.35E-03	5.90E-03
3	Scania DS11	2.52E-03	6.31E-04			5.29E-04	1.32E-04			6.44E-04	1.61E-04
SSM	SSM		3.41E-01								2.30E-02
F1	Leaks	2.53E-02	1.11E-01							1.70E-03	7.46E-03
T1	Condensate Tank - 400 bbl		12.53								5.13E-01
T2	Condensate Tank - 400 bbl		7.10E-01								1.81E-02
L1	Truck Loading (Condensate)		3.56E-01								9.05E-03
4	Fuel Gas Heater	4.29E-03	1.88E-02	9.13E-05	4.00E-04	2.28E-04	1.00E-03			2.28E-04	1.00E-03
5	Tank Heater	1.14E-04	5.00E-04								
PL	Pig Launcher		8.16E-03								5.51E-04
PR	Pig Reciever		3.52E-02								2.38E-03
T3	Produced H2O Tank - 70 bbl		1.88E-02								2.94E-03
L2	Truck Loading (Produced H2O)		2.35E-06								3.69E-07
T4	Lube Oil Tank - 500 gal										
T5	Used Oil Tank - 500 gal										
T6	Ambitrol Tank - 350 gal										
T7	Methanol Tank - 500 gal		2.24E-02								
	Total	1.36E-01	14.60	2.51E-04	1.10E-03	4.41E-02	1.91E-01	6.39E-04	2.80E-03	3.92E-03	5.83E-01

Facility Total PTE
Emissions (HAPs)

Company: **Harvest Four Corners, LLC**
Facility: **Los Mestenios Compressor Station**
Date / Rev: **November 2022 / Rev 2**

Unit Number	Description	Biphenyl,		Chromium,		Ethylbenzene,		Formaldehyde,		n-Hexane,	
		pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy
1	Solar Saturn T1200	8.22E-04	3.60E-03	6.85E-05	3.00E-04	2.51E-04	1.10E-03	4.24E-02	1.86E-01	3.77E-03	1.65E-02
3	Scania DS11							8.14E-04	2.04E-04		
SSM	SSM						5.09E-04				2.68E-01
F1	Leaks					3.76E-05	1.65E-04			1.98E-02	8.69E-02
T1	Condensate Tank - 400 bbl						6.42E-03				11.66
T2	Condensate Tank - 400 bbl						2.60E-04				6.77E-01
L1	Truck Loading (Condensate)						1.32E-04				3.40E-01
4	Fuel Gas Heater					6.39E-04	2.80E-03	2.51E-04	1.10E-03	4.11E-04	1.80E-03
5	Tank Heater					2.28E-05	1.00E-04			2.28E-05	1.00E-04
PL	Pig Launcher						1.22E-05				6.42E-03
PR	Pig Reciever						5.26E-05				2.77E-02
T3	Produced H2O Tank - 70 bbl						2.94E-04				9.24E-03
L2	Truck Loading (Produced H2O)						3.69E-08				1.16E-06
T4	Lube Oil Tank - 500 gal										
T5	Used Oil Tank - 500 gal										
T6	Ambitrol Tank - 350 gal										
T7	Methanol Tank - 500 gal										
	Total	8.22E-04	3.60E-03	6.85E-05	3.00E-04	9.51E-04	1.18E-02	4.34E-02	1.87E-01	2.40E-02	13.09

Facility Total PTE Emissions (HAPs)

Company: Harvest Four Corners, LLC
Facility: Los Mestenios Compressor Station
Date / Rev: November 2022 / Rev 2

Unit Number	Description	Isooctane		Manganese,		Methanol,		Naphthalene,		Nickel,	
		pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy
1	Solar Saturn T1200	4.02E-03	1.76E-02	4.57E-05	2.00E-04			2.28E-05	1.00E-04	2.28E-05	1.00E-04
3	Scania DS11							5.85E-05	1.46E-05		
SSM	SSM		6.72E-03								
F1	Leaks	5.67E-04	2.48E-03								
T1	Condensate Tank - 400 bbl		0.00E+00								
T2	Condensate Tank - 400 bbl		0.00E+00								
L1	Truck Loading (Condensate)		0.00E+00								
4	Fuel Gas Heater	8.45E-04	3.70E-03			2.97E-04	1.30E-03				
5	Tank Heater	2.28E-05	1.00E-04								
PL	Pig Launcher		1.61E-04								
PR	Pig Reciever		6.95E-04								
T3	Produced H2O Tank - 70 bbl										
L2	Truck Loading (Produced H2O)										
T4	Lube Oil Tank - 500 gal										
T5	Used Oil Tank - 500 gal										
T6	Ambitrol Tank - 350 gal										
T7	Methanol Tank - 500 gal						2.24E-02				
	Total	5.45E-03	3.15E-02	4.57E-05	2.00E-04	2.97E-04	2.37E-02	8.13E-05	1.15E-04	2.28E-05	1.00E-04

Facility Total PTE
Emissions (HAPs)

Company: Harvest Four Corners, LLC
Facility: Los Mestenios Compressor Station
Date / Rev: November 2022 / Rev 2

Unit Number	Description	Phenol,		Phosphorous,		Propionaldehyde,		Propylene Oxide,		Styrene,	
		pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy
1	Solar Saturn T1200	2.74E-04	1.20E-03	1.60E-04	7.00E-04	2.17E-03	9.50E-03	3.20E-04	1.40E-03		
3	Scania DS11										
SSM	SSM										
F1	Leaks										
T1	Condensate Tank - 400 bbl										
T2	Condensate Tank - 400 bbl										
L1	Truck Loading (Condensate)										
4	Fuel Gas Heater									6.16E-04	2.70E-03
5	Tank Heater									2.28E-05	1.00E-04
PL	Pig Launcher										
PR	Pig Reciever										
T3	Produced H2O Tank - 70 bbl										
L2	Truck Loading (Produced H2O)										
T4	Lube Oil Tank - 500 gal										
T5	Used Oil Tank - 500 gal										
T6	Ambitrol Tank - 350 gal										
T7	Methanol Tank - 500 gal										
	Total	2.74E-04	1.20E-03	1.60E-04	7.00E-04	2.17E-03	9.50E-03	3.20E-04	1.40E-03	6.39E-04	2.80E-03

Facility Total PTE
Emissions (HAPs)

Company: **Harvest Four Corners, LLC**
Facility: **Los Mestenios Compressor Station**
Date / Rev: **November 2022 / Rev 2**

Unit Number	Description	Toluene,		Xylenes,	
		pph	tpy	pph	tpy
1	Solar Saturn T1200	1.03E-03	4.50E-03	3.11E-03	1.36E-02
3	Scania DS11	2.82E-04	7.06E-05	1.97E-04	4.92E-05
SSM	SSM		3.64E-02		6.11E-03
F1	Leaks	2.69E-03	1.18E-02	4.51E-04	1.98E-03
T1	Condensate Tank - 400 bbl		3.16E-01		3.22E-02
T2	Condensate Tank - 400 bbl		1.31E-02		1.50E-03
L1	Truck Loading (Condensate)		6.54E-03		7.50E-04
4	Fuel Gas Heater	2.97E-04	1.30E-03	3.88E-04	1.70E-03
5	Tank Heater			2.28E-05	1.00E-04
PL	Pig Launcher		8.72E-04		1.46E-04
PR	Pig Reciever		3.76E-03		6.31E-04
T3	Produced H2O Tank - 70 bbl		3.78E-03		2.52E-03
L2	Truck Loading (Produced H2O)		4.74E-07		3.16E-07
T4	Lube Oil Tank - 500 gal				
T5	Used Oil Tank - 500 gal				
T6	Ambitrol Tank - 350 gal				
T7	Methanol Tank - 500 gal				
	Total	4.30E-03	3.98E-01	4.16E-03	6.13E-02

Facility Total Actual Emissions (Criteria Pollutants)

Company: **Harvest Four Corners, LLC**
Facility: **Los Mestenios Compressor Station**
Date / Rev: **November 2022 / Rev 2**

Unit Number	Description	NOX,		CO,		VOC,		SOX,		TSP,		PM10,		PM2.5,	
		pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy
1	Solar Saturn T1200	4.41	19.30	2.60	11.40	9.13E-02	4.00E-01	3.69E-02	1.61E-01	7.15E-02	3.13E-01	7.15E-02	3.13E-01	7.15E-02	3.13E-01
3	Scania DS11	3.04	1.85E-01	6.56E-01	3.99E-02	2.48E-01	1.51E-02	2.00E-01	1.22E-02	2.14E-01	1.30E-02	2.14E-01	1.30E-02	2.14E-01	1.30E-02
SSM	SSM	-	-	-	-	-	0.00	-	-	-	-	-	-	-	-
F1	Equipment Leaks	-	-	-	-	8.79E-01	3.85	-	-	-	-	-	-	-	-
T1	Condensate Tank - 400 bbl	-	-	-	-	-	7.12	-	-	-	-	-	-	-	-
T2	Condensate Tank - 400 bbl	-	-	-	-	-	1.63	-	-	-	-	-	-	-	-
L1	Truck Loading (Condensate)	-	-	-	-	-	0.26	-	-	-	-	-	-	-	-
	Total	7.45	19.49	3.26	11.44	1.22	13.28	2.37E-01	1.74E-01	2.85E-01	3.26E-01	2.85E-01	3.26E-01	2.85E-01	3.26E-01

Facility Total Actual Emissions (HAPs)

Company: Harvest Four Corners, LLC
Facility: Los Mestenios Compressor Station
Date / Rev: November 2022 / Rev 2

Unit Number	Description	Total HAPs, pph	Total HAPs, tpy	1,3-Butadiene, pph	1,3-Butadiene, tpy	Acetaldehyde, pph	Acetaldehyde, tpy	Acrolein, pph	Acrolein, tpy	Benzene, pph	Benzene, tpy
1	Solar Saturn T1200	1.04E-01	4.55E-01	1.60E-04	7.00E-04	4.34E-02	1.90E-01	6.39E-04	2.80E-03	1.35E-03	5.90E-03
3	Scania DS11	2.52E-03	1.54E-04			5.29E-04	3.22E-05			6.44E-04	3.92E-05
SSM	SSM		0.00E+00								0.00E+00
F1	Leaks	2.53E-02	1.11E-01							1.70E-03	7.46E-03
T1	Condensate Tank - 400 bbl		6.44E-01								4.79E-02
T2	Condensate Tank - 400 bbl		1.55E-01								9.04E-03
L1	Truck Loading (Condensate)		2.50E-02								1.46E-03
	Total	1.32E-01	1.39	1.60E-04	7.00E-04	4.39E-02	1.90E-01	6.39E-04	2.80E-03	3.69E-03	7.17E-02

Facility Total Actual Emissions (HAPs)

Company: **Harvest Four Corners, LLC**
Facility: **Los Mestenios Compressor Station**
Date / Rev: **November 2022 / Rev 2**

Unit Number	Description	Biphenyl,		Chromium,		Ethylbenzene,		Formaldehyde,		n-Hexane,	
		pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy
1	Solar Saturn T1200	8.22E-04	3.60E-03	6.85E-05	3.00E-04	2.51E-04	1.10E-03	4.24E-02	1.86E-01	3.77E-03	1.65E-02
3	Scania DS11							8.14E-04	4.96E-05		
SSM	SSM						0.00E+00				0.00E+00
F1	Leaks					3.76E-05	1.65E-04			1.98E-02	8.69E-02
T1	Condensate Tank - 400 bbl						2.41E-03				5.70E-01
T2	Condensate Tank - 400 bbl						4.95E-04				1.41E-01
L1	Truck Loading (Condensate)						7.96E-05				2.27E-02
	Total	8.22E-04	3.60E-03	6.85E-05	3.00E-04	2.89E-04	4.24E-03	4.32E-02	1.86E-01	2.36E-02	8.37E-01

Facility Total Actual Emissions (HAPs)

Company: Harvest Four Corners, LLC
Facility: Los Mestenios Compressor Station
Date / Rev: November 2022 / Rev 2

Unit Number	Description	Isooctane		Manganese,		Naphthalene,		Nickel,		Phenol,	
		pph	tpy	pph	tpy	pph	tpy	pph	tpy	pph	tpy
1	Solar Saturn T1200	4.02E-03	1.76E-02	4.57E-05	2.00E-04	2.28E-05	1.00E-04	2.28E-05	1.00E-04	2.74E-04	1.20E-03
3	Scania DS11					5.85E-05	3.56E-06				
SSM	SSM		0.00E+00								
F1	Leaks	5.67E-04	2.48E-03								
T1	Condensate Tank - 400 bbl		6.84E-03								
T2	Condensate Tank - 400 bbl		1.77E-03								
L1	Truck Loading (Condensate)		2.85E-04								
	Total	4.59E-03	2.90E-02	4.57E-05	2.00E-04	8.13E-05	1.04E-04	2.28E-05	1.00E-04	2.74E-04	1.20E-03

Facility Total Actual Emissions (HAPs)

Company: **Harvest Four Corners, LLC**
Facility: **Los Mestenios Compressor Station**
Date / Rev: **November 2022 / Rev 2**

Unit Number	Description	Phosphorous, pph	Phosphorous, tpy	Propionaldehyde, pph	Propionaldehyde, tpy	Propylene Oxide, pph	Propylene Oxide, tpy	Toluene, pph	Toluene, tpy	Xylenes, pph	Xylenes, tpy
1	Solar Saturn T1200	1.60E-04	7.00E-04	2.17E-03	9.50E-03	3.20E-04	1.40E-03	1.03E-03	4.50E-03	3.11E-03	1.36E-02
3	Scania DS11							2.82E-04	1.72E-05	1.97E-04	1.20E-05
SSM	SSM								0.00E+00		0.00E+00
F1	Leaks							2.69E-03	1.18E-02	4.51E-04	1.98E-03
T1	Condensate Tank - 400 bbl								5.66E-03		1.13E-02
T2	Condensate Tank - 400 bbl								1.19E-03		1.98E-03
L1	Truck Loading (Condensate)								1.91E-04		3.19E-04
	Total	1.60E-04	7.00E-04	2.17E-03	9.50E-03	3.20E-04	1.40E-03	4.00E-03	2.34E-02	3.75E-03	2.92E-02

Section 5.1

Turbine (Unit 1)

Written Description

Turbine (Unit 1)

The nitrogen oxide (NOx), carbon monoxide (CO), and volatile organic compound (VOC) emissions from the Solar Saturn T1200 turbine (Unit 1) were taken from previous applications and permits. Sulfur dioxide (SO2) and particulate emissions were calculated using the AP-42 emission factors from Table 3.1-2a. Hazardous air pollutant (HAP) emissions were calculated using GRI-HAPCalc 3.0. Potential to Emit (PTE) and 2021 actual emissions were calculated assuming the turbine operates at full site capacity for 8,760 hours per year (hr/yr). There were no shutdowns during 2021.

In this application, there are no changes to the calculations as they were presented in the either of the previous applications.

Section 5.1

Turbine (Unit 1)

PTE Emission Calculations

Turbine Exhaust PTE Emissions Calculations

Unit Number: 1
Description: Solar Saturn T1200

Horsepower Calculations

6,715	ft above MSL	Elevation	
1,200	hp	Nameplate hp	Mfg. data
1,136	hp	Site-rated hp	Mfg. data

Fuel Consumption

10.84	MMBtu/hr	Hourly fuel consumption	Btu/hp-hr x NMAQB site-rated hp / 1,000,000
12,044	scf/hr	Hourly fuel consumption	MMBtu/hr x 1,000,000 / Btu/scf
8,760	hr/yr	Annual operating time	Harvest Four Corners, LLC
94,958	MMBtu/yr	Annual fuel consumption	MMBtu/hr x hr/yr
105.51	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	Uncontrolled Emission Rates, pph	Uncontrolled Emission Rates, tpy
NOX	4.41	19.30
CO	2.60	11.40
VOC	9.13E-02	4.00E-01

Emissions brought forward from Part 71 TV permit R6NM-04-10-M1

Pollutants	Emission Factors, lb/MMBtu	Uncontrolled Emission Rates, pph	Uncontrolled Emission Rates, tpy
SO2	3.40E-03	3.69E-02	1.61E-01
TSP	6.60E-03	7.15E-02	3.13E-01
PM10	6.60E-03	7.15E-02	3.13E-01
PM2.5	6.60E-03	7.15E-02	3.13E-01

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

GRI-HAPCalc® 3.0
Turbine Report

Facility ID:	**LOS MESTENIOS**	**Notes:**
Operation Type:	**COMPRESSOR STATION**	
Facility Name:	**LOS MESTENIOS COMPRESSOR**	
User Name:	**Harvest Four Corners, LLC**	
Units of Measure:	**U.S. STANDARD**	

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

Turbine Unit

Unit Name: T1200

Hours of Operation:	8,760	Yearly
Rate Power:	1136	hp
Fuel Type:	NATURAL GAS	
Emission Factor Set:	FIELD > EPA > LITERATURE	
Additional EF Set:	-NONE-	

Calculated Emissions (ton/yr)

Chemical Name	Emissions	Emission Factor	Emission Factor Set
HAPs			
Formaldehyde	0.1856	0.01693680 g/bhp-hr	GRI Field
Acetaldehyde	0.1900	0.01733570 g/bhp-hr	GRI Field
1,3-Butadiene	0.0007	0.00006160 g/bhp-hr	GRI Field
Acrolein	0.0028	0.00026000 g/bhp-hr	GRI Field
Propional	0.0095	0.00086500 g/bhp-hr	GRI Field
Propylene Oxide	0.0014	0.00012480 g/bhp-hr	EPA
n-Nitrosodimethylamine	0.0000	0.00000100 g/bhp-hr	EPA
Benzene	0.0059	0.00053840 g/bhp-hr	GRI Field
Toluene	0.0045	0.00041100 g/bhp-hr	GRI Field
Ethylbenzene	0.0011	0.00010330 g/bhp-hr	EPA
Xylenes(m,p,o)	0.0136	0.00124410 g/bhp-hr	GRI Field
2,2,4-Trimethylpentane	0.0176	0.00160530 g/bhp-hr	GRI Field
n-Hexane	0.0165	0.00150580 g/bhp-hr	GRI Field
Phenol	0.0012	0.00011010 g/bhp-hr	GRI Field
n-Nitrosomorpholine	0.0000	0.00000100 g/bhp-hr	EPA
Naphthalene	0.0001	0.00000760 g/bhp-hr	GRI Field
2-Methylnaphthalene	0.0000	0.00000130 g/bhp-hr	GRI Field
Biphenyl	0.0036	0.00033050 g/bhp-hr	GRI Field
Phenanthrene	0.0000	0.00000050 g/bhp-hr	GRI Field
Chrysene	0.0000	0.00000100 g/bhp-hr	GRI Field
Beryllium	0.0000	0.00000010 g/bhp-hr	GRI Field
Phosphorous	0.0007	0.00006520 g/bhp-hr	GRI Field
Chromium	0.0001	0.00000820 g/bhp-hr	GRI Field
Chromium	0.0001	0.00000560 g/bhp-hr	EPA
Manganese	0.0002	0.00001750 g/bhp-hr	GRI Field
Nickel	0.0001	0.00000610 g/bhp-hr	GRI Field
Cobalt	0.0000	0.00000160 g/bhp-hr	GRI Field

Arsenic	0.0000	0.00000060	g/bhp-hr	GRI Field
Selenium	0.0000	0.00000030	g/bhp-hr	GRI Field
Cadmium	0.0000	0.00000020	g/bhp-hr	GRI Field
Mercury	0.0000	0.00000270	g/bhp-hr	GRI Field
Lead	0.0000	0.00000340	g/bhp-hr	GRI Field
Total	0.4553			

Criteria Pollutants

PM	0.3490	0.03184680	g/bhp-hr	EPA
CO	23.1061	2.10828420	g/bhp-hr	GRI Field
NMHC	2.1248	0.19387800	g/bhp-hr	GRI Field
NMEHC	0.1321	0.01205010	g/bhp-hr	EPA
NOx	13.7233	1.25216290	g/bhp-hr	GRI Field
SO2	0.0113	0.00102720	g/bhp-hr	GRI Field

Other Pollutants

Methane	10.8193	0.98719230	g/bhp-hr	GRI Field
Acetylene	0.0785	0.00716540	g/bhp-hr	GRI Field
Ethylene	0.1529	0.01395450	g/bhp-hr	GRI Field
Ethane	1.6449	0.15008370	g/bhp-hr	GRI Field
Propane	0.1754	0.01600000	g/bhp-hr	GRI Field
Isobutane	0.0526	0.00480000	g/bhp-hr	GRI Field
Butane	0.0570	0.00520000	g/bhp-hr	GRI Field
Trimethylamine	0.0000	0.00000070	g/bhp-hr	EPA
Cyclopentane	0.0181	0.00165110	g/bhp-hr	GRI Field
Butyrald/Isobutyraldehyde	0.0147	0.00134000	g/bhp-hr	GRI Field
n-Pentane	0.8894	0.08115000	g/bhp-hr	GRI Field
Cyclohexane	0.0671	0.00612400	g/bhp-hr	GRI Field
Methylcyclohexane	0.0968	0.00883120	g/bhp-hr	GRI Field
n-Octane	0.0349	0.00318890	g/bhp-hr	GRI Field
1,3,5-Trimethylbenzene	0.0329	0.00300000	g/bhp-hr	GRI Field
n-Nonane	0.0058	0.00053260	g/bhp-hr	GRI Field
CO2	5,188.2765	473.39811550	g/bhp-hr	EPA
Vanadium	0.0000	0.00000070	g/bhp-hr	GRI Field
Copper	0.0002	0.00002050	g/bhp-hr	GRI Field
Molybdenum	0.0002	0.00002030	g/bhp-hr	GRI Field
Barium	0.0003	0.00002290	g/bhp-hr	GRI Field

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

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

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

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

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

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

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

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

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

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

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

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

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

Section 5.1

Turbine (Unit 1)

Actual Emission Calculations

Turbine Exhaust Actual Emissions Calculations

Unit Number: 1
Description: Solar Saturn T1200

Horsepower Calculations

6,715	ft above MSL	Elevation	
1,200	hp	Nameplate hp	Mfg. data
1,136	hp	Site-rated hp	Mfg. data

Fuel Consumption

10.84	MMBtu/hr	Hourly fuel consumption	Btu/hp-hr x NMAQB site-rated hp / 1,000,000
12,044	scf/hr	Hourly fuel consumption	MMBtu/hr x 1,000,000 / Btu/scf
8,760	hr/yr	Annual operating time	Harvest Four Corners, LLC
94,958	MMBtu/yr	Annual fuel consumption	MMBtu/hr x hr/yr
105.51	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	Uncontrolled Emission Rates, pph	tpy
NOX	4.41	19.30
CO	2.60	11.40
VOC	9.13E-02	4.00E-01

Emissions brought forward from Part 71 TV permit R6NM-04-10-M1

Pollutants	Emission Factors, lb/MMBtu	Uncontrolled Emission Rates, pph	tpy
SO2	3.40E-03	3.69E-02	1.61E-01
TSP	6.60E-03	7.15E-02	3.13E-01
PM10	6.60E-03	7.15E-02	3.13E-01
PM2.5	6.60E-03	7.15E-02	3.13E-01

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

Section 5.2

Generator (Unit 3)

Written Description

Generator (Unit 2)

Emissions from the Waukesha Scania DS11 emergency generator engine were calculated using AP-42 emission factors from Tables 3.3-1 & 3.3-2. PTE emissions were calculated assuming the engine operates at full site capacity for 500 hr/yr. During 2021, the generator was in operation for a total of 121.8 hours. Actual 2021 emissions were calculated assuming the engine operates at full site capacity during that time.

In this application, there are no changes to the calculations as they were presented in the either of the previous applications.

Section 5.2

Generator (Unit 2)

PTE Emission Calculations

Engine Exhaust PTE Emissions Calculations

Unit Number: 3
Description: Scania DS11 Diesel Generator (Emergency)

Horsepower

250	hp	Nameplate hp	Mfg. data

The data sheet shows the DS11 has a horsepower rating of 250+. Since the assocaited alternator is rated at 130 kW, the assumption of a site rating at 250 hp should be conservative.

Fuel Consumption

0.69	MMBtu/hr	Hourly fuel consumption	Mfg. data
138,000	Btu/gal	Field gas heating value	Nominal heat content
5.00	gal/hr	Hourly fuel consumption	MMBtu/hr x 1,000,000 / Btu/gal
500	hr/yr	Annual operating time	Harvest Four Corners, LLC
2,500	gal/yr	Hourly fuel consumption	gal/hr x hr/yr
345	MMBtu/yr	Annual fuel consumption	MMBtu/hr x hr/yr

Steady-State Emission Rates

Pollutants	Emission Factors, lb/MMBtu	Uncontrolled Emission Rates, pph	Uncontrolled Emission Rates, tpy
NO2	4.41	3.04	7.61E-01
CO	9.50E-01	6.56E-01	1.64E-01
VOC	3.60E-01	2.48E-01	6.21E-02
SO2	2.90E-01	2.00E-01	5.00E-02
TSP	3.10E-01	2.14E-01	5.35E-02
PM10	3.10E-01	2.14E-01	5.35E-02
PM2.5	3.10E-01	2.14E-01	5.35E-02
Acetaldehyde	7.67E-04	5.29E-04	1.32E-04
Benzene	9.33E-04	6.44E-04	1.61E-04
Formaldehyde	1.18E-03	8.14E-04	2.04E-04
Naphthalene	8.48E-05	5.85E-05	1.46E-05
Toluene	4.09E-04	2.82E-04	7.06E-05
Xylene	2.85E-04	1.97E-04	4.92E-05

Emission factors taken from AP-42, Tables 3.3-1 & 3.3-2
Uncontrolled Emission Rates (pph) = lb/MMBtu x MMBtu/hr
Uncontrolled Emission Rates (tpy) = Uncontrolled Emission Rates (pph) x hr/yr / 2,000 lb/ton

Table 3.3-1. EMISSION FACTORS FOR UNCONTROLLED GASOLINE AND DIESEL INDUSTRIAL ENGINES[a]

Pollutant	Gasoline Fuel (SCC 2-02-003-01, 2-03-003-01)		Diesel Fuel (SCC 2-02-001-02, 2-03-001-01)		EMISSION FACTOR RATING
	Emission Factor (lb/hp-hr) (power output)	Emission Factor (lb/MMBtu) (fuel input)	Emission Factor (lb/hp-hr) (power output)	Emission Factor (lb/MMBtu) (fuel input)	
NO_x	0.011	1.63	0.031	4.41	D
CO	6.96 E-03[d]	0.99[d]	6.68 E-03	0.95	D
SO_x	5.91 E-04	0.084	2.05 E-03	0.29	D
PM-10[b]	7.21 E-04	0.10	2.20 E-03	0.31	D
CO_2[c]	1.08	154	1.15	164	B
Aldehydes	4.85 E-04	0.07	4.63 E-04	0.07	D
TOC					
Exhaust	0.015	2.10	2.47 E-03	0.35	D
Evaporative	6.61 E-04	0.09	0.00	0.00	E
Crankcase	4.85 E-03	0.69	4.41 E-05	0.01	E
Refueling	1.08 E-03	0.15	0.00	0.00	E

[a] References 2,5-6,9-14. When necessary, an average brake-specific fuel consumption (BSFC) of 7,000 Btu/hp-hr was used to convert from lb/MMBtu to lb/hp-hr. To convert from lb/hp-hr to kg/kw-hr, multiply by 0.608. To convert from lb/MMBtu to ng/J, multiply by 430. SCC = Source Classification Code. TOC = total organic compounds.

[b] PM-10 = particulate matter less than or equal to 10 µm aerodynamic diameter. All particulate is assumed to be ≤ 1 µm in size.

[c] Assumes 99% conversion of carbon in fuel to CO_2 with 87 weight % carbon in diesel, 86 weight % carbon in gasoline, average BSFC of 7,000 Btu/hp-hr, diesel heating value of 19,300 Btu/lb, and gasoline heating value of 20,300 Btu/lb.

[d] Instead of 0.439 lb/hp-hr (power output) and 62.7 lb/mmBtu (fuel input), the correct emissions factors values are 6.96 E-03 lb/hp-hr (power output) and 0.99 lb/mmBtu (fuel input), respectively. This is an editorial correction. March 24, 2009

Table 3.3-2. SPECIATED ORGANIC COMPOUND EMISSION FACTORS FOR UNCONTROLLED DIESEL ENGINES[a]

EMISSION FACTOR RATING: E

Pollutant	Emission Factor (Fuel Input) (lb/MMBtu)
Benzene[b]	9.33 E-04
Toluene[b]	4.09 E-04
Xylenes[b]	2.85 E-04
Propylene	2.58 E-03
1,3-Butadiene[b,c]	<3.91 E-05
Formaldehyde[b]	1.18 E-03
Acetaldehyde[b]	7.67 E-04
Acrolein[b]	<9.25 E-05
Polycyclic aromatic hydrocarbons (PAH)	
Naphthalene[b]	8.48 E-05
Acenaphthylene	<5.06 E-06
Acenaphthene	<1.42 E-06
Fluorene	2.92 E-05
Phenanthrene	2.94 E-05
Anthracene	1.87 E-06
Fluoranthene	7.61 E-06
Pyrene	4.78 E-06
Benzo(a)anthracene	1.68 E-06
Chrysene	3.53 E-07
Benzo(b)fluoranthene	<9.91 E-08
Benzo(k)fluoranthene	<1.55 E-07
Benzo(a)pyrene	<1.88 E-07
Indeno(1,2,3-cd)pyrene	<3.75 E-07
Dibenz(a,h)anthracene	<5.83 E-07
Benzo(g,h,l)perylene	<4.89 E-07
TOTAL PAH	1.68 E-04

[a] Based on the uncontrolled levels of 2 diesel engines from References 6-7. Source Classification Codes 2-02-001-02, 2-03-001-01. To convert from lb/MMBtu to ng/J, multiply by 430.
[b] Hazardous air pollutant listed in the *Clean Air Act*.
[c] Based on data from 1 engine.

Scania DS11 Diesel (11.0)

Quick Overview

Engine type: DS11 Diesel - Scania
Construction Year: 1970-1995
Number of cylinders: 6
Bore ø: 127 mm
Engine content: 11022 CC
Compression ratio: 15 : 1
HP: 250+

Parts

Fuel		Diesel
Construction Year		1970-1995
Bore		127 x 145
Number of cylinders		6
Compression ratio		15 : 1
Engine content CC		11022
Engine type		DS11 Diesel - Scania
Car type		Scania DS11 11.0 Diesel series - Scania DS 11 (11.0)
HP		250+
Piston	0	MKP op aanvraag - 127mm - std (3480)
Piston Rings	0	MKPR 3480 - ø 127mm - 2,385 - 2,385 - 2,385 - 4,747 mm std
Small end bearings	0	MKSB S 6597 L - std 127mm
Cylinder Liner	0	MKL op aanvraag - std 127mm
Kitset / Assembly	0	MKASS 612790 - std
Conrod Bearings	0	MKCB VPR 747 - std
Main Bearings	0	MKMB VPM 748 - std
Camshaft bearing set	0	VPW 100 - std
Valve intake	0	MKIV op aanvraag - std
Exhaust Valve	0	MKEV op aanvraag - std
Valve guide intake	0	MKIG op aanvraag - std
Valve guide exhaust	0	MKEG op aanvraag - std
Head gasket set	0	MKHS op aanvraag - std
Headgasket	0	MKHG op aanvraag - std
Piston Pin Bushings	0	MKSB S 6597 L - std 127mm
Parts		Components not found? Request at comments!

Section 5.2

Generator (Unit 2)

Actual Emission Calculations

Engine Exhaust Actual Emissions Calculations

Unit Number: 3
Description: Scania DS11 Diesel Generator (Emergency)

Horsepower

250	hp	Nameplate hp	Mfg. data

The data sheet shows the DS11 has a horsepower rating of 250+. Since the assocaited alternator is rated at 130 kW, the assumption of a site rating at 250 hp should be conservative.

Fuel Consumption

0.69	MMBtu/hr	Hourly fuel consumption	Mfg. data
138,000	Btu/gal	Field gas heating value	Nominal heat content
5.00	gal/hr	Hourly fuel consumption	MMBtu/hr x 1,000,000 / Btu/gal
121.8	hr/yr	Annual operating time	Harvest Four Corners, LLC
609	gal/yr	Hourly fuel consumption	gal/hr x hr/yr
84	MMBtu/yr	Annual fuel consumption	MMBtu/hr x hr/yr

Steady-State Emission Rates

Pollutants	Emission Factors, lb/MMBtu	Uncontrolled Emission Rates, pph	Uncontrolled Emission Rates, tpy
NO2	4.41	3.04	1.85E-01
CO	9.50E-01	6.56E-01	3.99E-02
VOC	3.60E-01	2.48E-01	1.51E-02
SO2	2.90E-01	2.00E-01	1.22E-02
TSP	3.10E-01	2.14E-01	1.30E-02
PM10	3.10E-01	2.14E-01	1.30E-02
PM2.5	3.10E-01	2.14E-01	1.30E-02
Acetaldehyde	7.67E-04	5.29E-04	3.22E-05
Benzene	9.33E-04	6.44E-04	3.92E-05
Formaldehyde	1.18E-03	8.14E-04	4.96E-05
Naphthalene	8.48E-05	5.85E-05	3.56E-06
Toluene	4.09E-04	2.82E-04	1.72E-05
Xylene	2.85E-04	1.97E-04	1.20E-05

Emission factors taken from AP-42, Tables 3.3-1 & 3.3-2
Uncontrolled Emission Rates (pph) = lb/MMBtu x MMBtu/hr
Uncontrolled Emission Rates (tpy) = Uncontrolled Emission Rates (pph) x hr/yr / 2,000 lb/ton

Section 5.3

Startup Shutdown & Maintenance (Unit SSM)

Written Description

Startup, Shutdown & Maintenance (Unit SSM)

Emissions associated with startups, shutdowns and routine maintenance (SSM) of the turbine (Unit 1) and associated piping are vented to the atmosphere.

The VOC and HAP emissions from blowdowns of the compressor and piping associated with the facility were calculated from the quantity of gas vented during each event, the composition of the gas, and the number of events. The quantity of gas vented during each event was estimated by Harvest. The composition of the gas was based on a recent gas analysis from the facility. The estimated annual number of blowdown events includes an added safety factor because emissions from each blowdown event are dependent on the composition of the gas in the pipeline and the number of blowdowns in a year may vary. Experience indicates the composition of the gas will vary.

Four extended gas analyses (collected during the last five years, 2017 - 2021) were available for use in the application: April 2017, April 2018, October 2019, and May 2021. Harvest calculated SSM emissions using the analysis that predicted the highest VOC emission rate, the May 2021 analysis.

PTE emissions were calculated assuming a maximum of 100 blowdowns per year. There were no turbine startups or shutdowns during 2021. Therefore, actual 2021 emissions were calculated assuming zero blowdowns per year.

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

In this application, there are no changes to the calculations as they were presented in the either of the previous applications.

Response to EPA request for additional information:

- An explanation of how VOC emissions are calculated using the well gas analysis for all the emission units that this analysis is used for and a calculation that demonstrates this description.

The gas passing through the facility is a blend of gas from wells throughout the area. See the written description above and the calculation spreadsheets.

Section 5.3

Startup Shutdown & Maintenance (Unit SSM)

PTE Emission Calculations

Turbine & Compressor Blowdown PTE Emissions Calculations

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

Throughput

1	# of units	Number of units	Harvest Four Corners, LLC
100	events/yr/unit	Blowdowns per year per unit	Harvest Four Corners, LLC
5,780	scf/event	Gas loss per blowdown (compressor)	Harvest Four Corners, LLC
12,400	scf/event	Gas loss per blowdown (turbine)	Harvest Four Corners, LLC
1,818,000	scf/yr	Annual gas loss	# of units x events/yr/unit x [scf/event (compressor) + scf/event (turbine)]

Emission Rates

Pollutants	Emission Factors, lb/scf	Uncontrolled, Emission Rates, tpy
VOC	1.307E-02	11.88
Benzene	2.533E-05	2.30E-02
Ethylbenzene	5.598E-07	5.09E-04
n-Hexane	2.951E-04	2.68E-01
Isooctane	7.398E-06	6.72E-03
Toluene	4.008E-05	3.64E-02
Xylene	6.718E-06	6.11E-03

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

Gas Composition

Components	Mole Percents, %	Molecular Weights, lb/lb-mole	Emission Factors, lb/scf
Carbon dioxide	0.8632	44.01	1.002E-03
Hydrogen sulfide	0.0000	34.07	0.000E+00
Nitrogen	0.4462	28.01	3.295E-04
Methane	78.7294	16.04	3.329E-02
Ethane	10.7901	30.07	8.554E-03
Propane	5.0734	44.09	5.897E-03
Isobutane	0.8940	58.12	1.370E-03
n-Butane	1.5609	58.12	2.392E-03
Isopentane	0.5577	72.15	1.061E-03
n-Pentane	0.4298	72.15	8.176E-04
Cyclopentane	0.0189	70.14	3.495E-05
n-Hexane	0.1299	86.17	2.951E-04
Cyclohexane	0.0389	84.16	8.631E-05
Other hexanes	0.2872	86.18	6.525E-04
Heptanes	0.0720	100.20	1.902E-04
Methylcyclohexane	0.0556	98.19	1.439E-04
Isooctane	0.0028	100.21	7.398E-06
Benzene	0.0123	78.11	2.533E-05
Toluene	0.0165	92.14	4.008E-05
Ethylbenzene	0.0002	106.17	5.598E-07
Xylenes	0.0024	106.17	6.718E-06
C8+ Heavies	0.0187	110.00	5.423E-05
Total	100.0001		
Total VOC			1.307E-02

Gas stream composition obtained from Los Mestenios extended gas analysis dated 05/06/2021
Emission Factors (lb/scf) = (% / 100) x lb/lb-mole / 379.3 scf/lb-mole

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

Analysis No: HM2021049
Cust No: 33700-10375

Well/Lease Information

Customer Name:	HARVEST MIDSTREAM	Source:	METER RUN
Well Name:	Los Mestenios CDP	Well Flowing:	Y
County/State:		Pressure:	80 PSIG
Location:		Flow Temp:	60 DEG. F
Lease/PA/CA:		Ambient Temp:	72 DEG. F
Formation:		Flow Rate:	MCF/D
Cust. Stn. No.:		Sample Method:	Purge & Fill
		Sample Date:	05/06/2021
		Sample Time:	2.10 PM
		Sampled By:	
Heat Trace:	N	Sampled by (CO):	Harvest Mid.
Remarks:	Calculated Molecular Weight = 21.3865		

Analysis

Component:	Mole%:	Unormalized %:	**GPM:	*BTU:	*SP Gravity:
Nitrogen	0.4462	0.4456	0.0490	0.00	0.0043
CO2	0.8632	0.8621	0.1480	0.00	0.0131
Methane	78.7294	78.6321	13.3930	795.17	0.4361
Ethane	10.7901	10.7768	2.8960	190.95	0.1120
Propane	5.0734	5.0671	1.4030	127.65	0.0772
Iso-Butane	0.8940	0.8929	0.2940	29.07	0.0179
N-Butane	1.5609	1.5590	0.4940	50.92	0.0313
Neopentane 2,2 dmc3	0.0000	0.0000	0.0000	0.00	0.0000
I-Pentane	0.5577	0.5570	0.2050	22.31	0.0139
N-Pentane	0.4298	0.4293	0.1560	17.23	0.0107
Neohexane	0.0117	N/R	0.0050	0.55	0.0003
2-3-Dimethylbutane	0.0181	N/R	0.0070	0.86	0.0005
Cyclopentane	0.0189	N/R	0.0060	0.71	0.0005
2-Methylpentane	0.1220	N/R	0.0510	5.79	0.0036
3-Methylpentane	0.0464	N/R	0.0190	2.20	0.0014
C6	0.1299	0.6545	0.0540	6.18	0.0039
Methylcyclopentane	0.0890	N/R	0.0320	4.01	0.0026
Benzene	0.0123	N/R	0.0030	0.46	0.0003
Cyclohexane	0.0389	N/R	0.0130	1.74	0.0011
2-Methylhexane	0.0143	N/R	0.0070	0.78	0.0005
3-Methylhexane	0.0156	N/R	0.0070	0.85	0.0005
2-2-4-Trimethylpentane	0.0028	N/R	0.0010	0.17	0.0001
i-heptanes	0.0091	N/R	0.0040	0.48	0.0003
Heptane	0.0330	N/R	0.0150	1.82	0.0011

Methylcyclohexane	0.0556	N/R	0.0220	2.90	0.0019
Toluene	0.0165	N/R	0.0060	0.74	0.0005
2-Methylheptane	0.0064	N/R	0.0030	0.40	0.0003
4-Methylheptane	0.0033	N/R	0.0020	0.20	0.0001
i-Octanes	0.0026	N/R	0.0010	0.16	0.0001
Octane	0.0056	N/R	0.0030	0.35	0.0002
Ethylbenzene	0.0002	N/R	0.0000	0.01	0.0000
m, p Xylene	0.0022	N/R	0.0010	0.11	0.0001
o Xylene (& 2,2,4 tmc7)	0.0002	N/R	0.0000	0.01	0.0000
i-C9	0.0002	N/R	0.0000	0.01	0.0000
C9	0.0003	N/R	0.0000	0.02	0.0000
i-C10	0.0001	N/R	0.0000	0.01	0.0000
C10	0.0001	N/R	0.0000	0.01	0.0000
i-C11	0.0000	N/R	0.0000	0.00	0.0000
C11	0.0001	N/R	0.0000	0.01	0.0000
C12P	0.0000	N/R	0.0000	0.00	0.0000
Total	100.00	99.876	19.300	1264.86	0.7368

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

COMPRESSIBLITY FACTOR (1/Z):	1.0037	CYLINDER #:	16
BTU/CU.FT IDEAL:	1267.8	CYLINDER PRESSURE:	66 PSIG
BTU/CU.FT (DRY) CORRECTED FOR (1/Z):	1272.5	ANALYSIS DATE:	05/07/2021
BTU/CU.FT (WET) CORRECTED FOR (1/Z):	1250.4	ANALYIS TIME:	11:17:24 AM
DRY BTU @ 15.025:	1298.0	ANALYSIS RUN BY:	PATRICIA KING
REAL SPECIFIC GRAVITY:	0.7392		

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: 05/11/2021**
GC Method: C12+BTEX Gas

Section 5.3

Startup Shutdown & Maintenance (Unit SSM)

Actual Emission Calculations

Turbine & Compressor Blowdown Actual Emissions Calculations

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

Throughput

1	# of units	Number of units	Harvest Four Corners, LLC
0	events/yr/unit	Blowdowns per year per unit	Harvest Four Corners, LLC
5,780	scf/event	Gas loss per blowdown (compressor)	Harvest Four Corners, LLC
12,400	scf/event	Gas loss per blowdown (turbine)	Harvest Four Corners, LLC
0	scf/yr	Annual gas loss	# of units x events/yr/unit x [scf/event (compressor) + scf/event (turbine)]

Emission Rates

Pollutants	Emission Factors, lb/scf	Uncontrolled, Emission Rates, tpy
VOC	1.307E-02	0.00E+00
Benzene	2.533E-05	0.00E+00
Ethylbenzene	5.598E-07	0.00E+00
n-Hexane	2.951E-04	0.00E+00
Isooctane	7.398E-06	0.00E+00
Toluene	4.008E-05	0.00E+00
Xylene	6.718E-06	0.00E+00

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

Gas Composition

Components	Mole Percents, %	Molecular Weights, lb/lb-mole	Emission Factors, lb/scf
Carbon dioxide	0.8632	44.01	1.002E-03
Hydrogen sulfide	0.0000	34.07	0.000E+00
Nitrogen	0.4462	28.01	3.295E-04
Methane	78.7294	16.04	3.329E-02
Ethane	10.7901	30.07	8.554E-03
Propane	5.0734	44.09	5.897E-03
Isobutane	0.8940	58.12	1.370E-03
n-Butane	1.5609	58.12	2.392E-03
Isopentane	0.5577	72.15	1.061E-03
n-Pentane	0.4298	72.15	8.176E-04
Cyclopentane	0.0189	70.14	3.495E-05
n-Hexane	0.1299	86.17	2.951E-04
Cyclohexane	0.0389	84.16	8.631E-05
Other hexanes	0.2872	86.18	6.525E-04
Heptanes	0.0720	100.20	1.902E-04
Methylcyclohexane	0.0556	98.19	1.439E-04
Isooctane	0.0028	100.21	7.398E-06
Benzene	0.0123	78.11	2.533E-05
Toluene	0.0165	92.14	4.008E-05
Ethylbenzene	0.0002	106.17	5.598E-07
Xylenes	0.0024	106.17	6.718E-06
C8+ Heavies	0.0186	110.00	5.394E-05
Total	100.0000		
Total VOC			1.307E-02

Gas stream composition obtained from Los Mestenios extended gas analysis dated 05/06/2021
Emission Factors (lb/scf) = (% / 100) x lb/lb-mole / 379.3 scf/lb-mole

Section 5.4

Equipment Leaks (Unit F1)

Written Description

Equipment Leaks (F-1)

Fugitive emissions from equipment leaks (valves, flanges, seals, etc.) were calculated using emission factors from the *1995 Protocol for Equipment Leak Emission Estimates* published by the Environmental Protection Agency (EPA), component counts provided by Harvest, and the gas composition provided by a recent extended gas analysis. First, total organic compound (TOC) emissions were estimated using the component count and EPA emission factors. Then, the gas composition from the extended gas analysis (converted from mole fraction to weight percent) was used to estimate the percentage of VOC and HAP in the TOC.

Four extended gas analyses (collected during the last five years, 2017 - 2021) were available for use in the application: April 2017, April 2018, October 2019, and May 2021. Harvest calculated equipment leak emissions using the analysis that predicted the highest VOC emission rate, the May 2021 analysis.

PTE and 2021 actual emissions were calculated assuming all the equipment operated 8,760 hours during the year.

In this application, there are no changes to the calculations as they were presented in the either of the previous applications.

Response to EPA request for additional information:

- An explanation of how VOC emissions are calculated using the well gas analysis for all the emission units that this analysis is used for and a calculation that demonstrates this description.

See the written description above and the calculation spreadsheets provided in this subsection.

Section 5.4

Equipment Leaks (Unit F1)

PTE Emission Calculations

Equipment Leaks PTE 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	252	0.0045	0.0099	2.49	10.93
Connectors	187	0.0002	0.0004	0.08	0.36
Pump Seals	0	0.0024	0.0053	0.00	0.00
Compressor Seals	28	0.0088	0.0194	0.54	2.37
Pressure Relief Valves	13	0.0088	0.0194	0.25	1.10
Open-Ended Lines	73	0.0020	0.0044	0.32	1.41
Total				**3.69**	**16.17**

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	0.8632	44.010				
Hydrogen sulfide	0.0000	34.070				
Nitrogen	0.4462	28.013				
Methane	78.7294	16.043	1263.056	60.619		
Ethane	10.7901	30.070	324.458	15.572		
Propane	5.0734	44.097	223.722	10.737	3.96E-01	1.74E+00
Isobutane	0.8940	58.123	51.962	2.494	9.21E-02	4.03E-01
n-Butane	1.5609	58.123	90.724	4.354	1.61E-01	7.04E-01
Isopentane	0.5577	72.150	40.238	1.931	7.13E-02	3.12E-01
n-Pentane	0.4298	72.150	31.010	1.488	5.49E-02	2.41E-01
Cyclopentane	0.0189	70.134	1.326	0.064	2.35E-03	1.03E-02
n-Hexane	0.1299	86.177	11.194	0.537	1.98E-02	8.69E-02
Cyclohexane	0.0389	84.161	3.274	0.157	5.80E-03	2.54E-02
Other hexanes	0.2872	86.177	24.750	1.188	4.39E-02	1.92E-01
Heptanes	0.0720	100.204	7.215	0.346	1.28E-02	5.60E-02
Methylcyclohexane	0.0556	98.188	5.459	0.262	9.67E-03	4.24E-02
Isooctane	0.0028	114.231	0.320	0.015	5.67E-04	2.48E-03
Benzene	0.0123	78.114	0.961	0.046	1.70E-03	7.46E-03
Toluene	0.0165	92.141	1.520	0.073	2.69E-03	1.18E-02
Ethylbenzene	0.0002	106.167	0.021	0.001	3.76E-05	1.65E-04
Xylenes	0.0024	106.167	0.255	0.012	4.51E-04	1.98E-03
C8+ Heavies	0.0187	114.231	2.136	0.103	3.79E-03	1.66E-02
Total	100.0001		2083.601			
Total VOC				23.809	8.79E-01	3.85

Gas stream composition obtained from Los Mestenios extended gas analysis dated 05/06/2021
Component Weights (lb/lb-mole) = (% / 100) * Molecular Weights (lb/lb-mole)
Weight Percent of TOC (%) = 100 x Component Weights (lb/lb-mole) / Total Component Weight (lb/lb-mole)
Uncontrolled Emission Rates (pph) = Total Uncontrolled TOC Emission Rate (pph) x (% / 100)
Uncontrolled Emission Rates (tpy) = Total Uncontrolled TOC Emission Rate (tpy) x (% / 100)

Equipment Leaks PTE Emissions Calculations

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

Number of Compression Units at the Facility: 1
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	44	59	0	4	6	11	0	4	9
Components from dehydrators	0	0	0	0	0	0	0	0	0
Total	165	132	0	28	13	59	3	14	21
Adjusted Total	252	187	0	28	13	73			

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 typical configuration of a Harvest compressor station (two stage compression)

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

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

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

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

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

Section 5.4

Equipment Leaks (Unit F1)

Actual Emission Calculations

Equipment Leaks Actual 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	252	0.0045	0.0099	2.49	10.93
Connectors	187	0.0002	0.0004	0.08	0.36
Pump Seals	0	0.0024	0.0053	0.00	0.00
Compressor Seals	28	0.0088	0.0194	0.54	2.37
Pressure Relief Valves	13	0.0088	0.0194	0.25	1.10
Open-Ended Lines	73	0.0020	0.0044	0.32	1.41
Total				**3.69**	**16.17**

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	0.8632	44.010				
Hydrogen sulfide	0.0000	34.070				
Nitrogen	0.4462	28.013				
Methane	78.7294	16.043	1263.056	60.619		
Ethane	10.7901	30.070	324.458	15.572		
Propane	5.0734	44.097	223.722	10.737	3.96E-01	1.74E+00
Isobutane	0.8940	58.123	51.962	2.494	9.21E-02	4.03E-01
n-Butane	1.5609	58.123	90.724	4.354	1.61E-01	7.04E-01
Isopentane	0.5577	72.150	40.238	1.931	7.13E-02	3.12E-01
n-Pentane	0.4298	72.150	31.010	1.488	5.49E-02	2.41E-01
Cyclopentane	0.0189	70.134	1.326	0.064	2.35E-03	1.03E-02
n-Hexane	0.1299	86.177	11.194	0.537	1.98E-02	8.69E-02
Cyclohexane	0.0389	84.161	3.274	0.157	5.80E-03	2.54E-02
Other hexanes	0.2872	86.177	24.750	1.188	4.39E-02	1.92E-01
Heptanes	0.0720	100.204	7.215	0.346	1.28E-02	5.60E-02
Methylcyclohexane	0.0556	98.188	5.459	0.262	9.67E-03	4.24E-02
Isooctane	0.0028	114.231	0.320	0.015	5.67E-04	2.48E-03
Benzene	0.0123	78.114	0.961	0.046	1.70E-03	7.46E-03
Toluene	0.0165	92.141	1.520	0.073	2.69E-03	1.18E-02
Ethylbenzene	0.0002	106.167	0.021	0.001	3.76E-05	1.65E-04
Xylenes	0.0024	106.167	0.255	0.012	4.51E-04	1.98E-03
C8+ Heavies	0.0186	114.231	2.125	0.102	3.76E-03	1.65E-02
Total	100.0000		2083.590			
Total VOC				23.809	8.79E-01	3.85

Gas stream composition obtained from Los Mestenios extended gas analysis dated 05/06/2021
Component Weights (lb/lb-mole) = (% / 100) * Molecular Weights (lb/lb-mole)
Weight Percent of TOC (%) = 100 x Component Weights (lb/lb-mole) / Total Component Weight (lb/lb-mole)
Uncontrolled Emission Rates (pph) = Total Uncontrolled TOC Emission Rate (pph) x (% / 100)
Uncontrolled Emission Rates (tpy) = Total Uncontrolled TOC Emission Rate (tpy) x (% / 100)

Equipment Leaks Actual Emissions Calculations

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

Number of Compression Units at the Facility: 1
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	44	59	0	4	6	11	0	4	9
Components from dehydrators	0	0	0	0	0	0	0	0	0
Total	165	132	0	28	13	59	3	14	21
Adjusted Total	252	187	0	28	13	73			

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 typical configuration of a Harvest compressor station (two stage compression)

Section 5.5

Condensate Storage Tanks (Units T1 & T2)

Written Description

Condensate Storage Tanks (Units T1 & T2)

The facility is equipped with two condensate storage tanks. Unit T1 receives the condensate when it first enters the facility and all flashing occurs in this tank. Unit T2 is permitted to prevent overflows from T1 during times when haul truck access is limited due to outside factors such as weather and/or road conditions. Flashing does not occur in this tank, only working/breathing losses.

Flash emissions from the condensate storage tank (Unit T1) were calculated using VMGSim. Flashing typically occurs when high pressure liquids are dropped to lower pressures, in this case when high pressure condensate empties into the atmospheric condensate storage tanks. VMGSim is an effective tool for estimating these flash emissions. Using the composition of the condensate and the applicable pressures and temperatures for the facility, VMGSim can predict the amounts of different pollutants that will be emitted from the tanks. The inputs and outputs are identified on Page 3 of each VMGSim output.

Using molecular weights, the VMGSim flash gas output compositions from the condensate storage tanks were converted from mole fractions to weight percent. See the table on Page 2 of each of the Condensate Storage Tank Emissions Data and Calculations spreadsheets. These weight percentages were used to calculate HAP emissions, as percentages of the VOC emissions.

For consistency with the previous application and revision, the PTE flash emission calculations were prepared using a condensate throughput rate of 22,141 bbl/yr. Note that the highest 12-month rolling total condensate throughput occurred in May 2017 and was only 9,109.8 bbl/yr. Four condensate analyses (collected during the last five years, 2017 - 2021) were available for use in the application: December 2017, December 2018, November 2019, and August 2021. Harvest ran VMGSim using each of these analyses and prepared the PTE flash emission calculations in this application using the analysis that predicted the highest VOC emission rate, the December 2018 analysis.

Actual flash emissions were calculated using the condensate throughput from 2021 (3,667.8 bbl/yr) and the condensate analysis from August 2021.

Working/breathing losses from the condensate storage tanks were calculated using TANKS 4.0.9d. Using molecular weights the post-flash condensate composition (excluding water), provided by VMGSim, was converted from mole fractions to weight percentages. See the table on Page 3 of each of the Condensate Storage Tank Emissions Data and Calculations spreadsheets. These weight percentages, in turn, were input into the TANKS program, along with the appropriate tank dimensions and throughputs. The Unit T1 throughput was estimated at 22,141 bbl/yr. Since Unit T2 is a backup tank, its throughput was estimated at 11,070 bbl/yr, half the throughput seen by Unit T1. The TANKS inputs and outputs can be seen on the TANKS output file, included with the calculations in this section.

The working/breathing losses and flash emissions from the condensate storage tanks were combined. See the table on Page 1 of each of the Condensate Storage Tank Emissions Data and Calculations spreadsheets.

This method of calculating condensate storage tank emissions is a change from what was submitted in the previous two versions of the application.

Response to EPA request for additional information:

- Provide the results EPA request that Harvest use the worst-case condensate sample analysis results over the 5-year time limit of the Los Mestenios Part 71 permit to calculate working and breathing losses and the flash emissions for the new TV application. Include the 2020 condensate analysis results when determining worst-case analysis and provide EPA a copy of these results. Also, revise all PTE calculations that utilize the condensate sample analysis to worst case scenario.

See the written description above. Harvest did not sample the condensate in 2020. Note that there is not requirement for annual condensate sampling.

Response to EPA request for additional information:

- Harvest should not be using an outdated method to calculate tank emissions. Why is Harvest using an outdated method to calculate working and breathing losses of the tanks? Why is Harvest not using the same software to calculate working and breathing losses and the flash emissions?

Harvest did not use an outdated method for calculating working breathing losses. TANKS 4.0.9d was selected both because its use is standard industry practice accepted in all the states in which Harvest operates and because the model uses the EPA recommended equations/algorithms specified in AP-42 Chapter 7 to calculate working/breathing losses. From the EPA website:

> ***IMPORTANT NOTE - The TANKS model was developed using a software that is now outdated. Because of this, the model is not reliably functional on computers using certain operating systems such as Windows Vista or Windows 7. We are anticipating that additional problems will arise as PCs switch to the other operating systems. Therefore, we can no longer provide assistance to users of TANKs 4.09d. The model will remain on the website to be used at your discretion and at your own risk. We will continue to recommend the use of the equations/algorithms specified in AP-42 Chapter 7 for estimating VOC emissions from storage tanks. The equations specified in AP-42 Chapter

7 (https://www.epa.gov/ttn/chief/ap42/ch07/index.html) can be employed with many current spreadsheet/software programs.

Windows Vista and Windows 7 were not used when running the model. TANKS 4.0.9d has been operating reliably using the Windows 10 operating system. As EPA notes, the software that was used in the development of the model has become outdated. However, the underlying calculation methodology used in the program, which is based on Chapter 7 of AP-42, still follows EPA's recommendation for estimating emissions from storage tanks. Therefore, the TANKS 4.0.9d software remains a valid option for calculating working and breathing losses from storage tanks.

Note that Promax and VMGSim both use the AP-42 Chapter 7 equations/algorithms to calculate working/breathing losses. If VMGSim had been used to calculate the losses, results would have been essentially the same, except that unlike TANKS 4.0.9d, VMGSim does not provide access to the Albuquerque meteorological data.

Response to EPA request for additional information:

- <u>Explain the use of</u> emission factors from Colorado, <u>meteorological data from Colorado</u>, etc. instead of New Mexico.

The TANKS 4.0.9d meteorological data from Albuquerque, New Mexico was used in the original application and Revision 1. Working/breathing losses in this application were also calculated using Albuquerque, New Mexico meteorological data.

Response to EPA request for additional information:

- Provided an explanation on the meaning of "refinements" of VMGSym inputs.

Harvest was referring to conducting the modeling internally (rather than using an outside consultant) and using actual data from their operation of the facility rather than data Williams Four Corners, LLC may have been using.

As noted in previous responses to EPA, Harvest cannot compare the current calculations with previous applications. Harvest did not own or operate the facility at that time and does not have access to detailed information showing how past emissions were calculated. Harvest can only state that the emissions calculations in this application represent operations as they exist today.

Response to EPA request for additional information:

- The revised Facility's PTE calculations using worst case scenario of the condensate analysis over the 5-year term of the title V permit.

See the written description above and the calculations in this section.

Response to EPA request for additional information:

- The complete characterization of the inputs and outputs to the VMGSym software used to calculate flash emissions and explanation why the model is being used separate of another model used for working and breathing losses from tanks – specifically explain how the different models, i.e., VMGSym and the outdated Tanks 4.09d, used together provide more accurate emission estimates for tank emissions instead of a single model like either VMGSym or TankESP that would account for all three types of emissions.

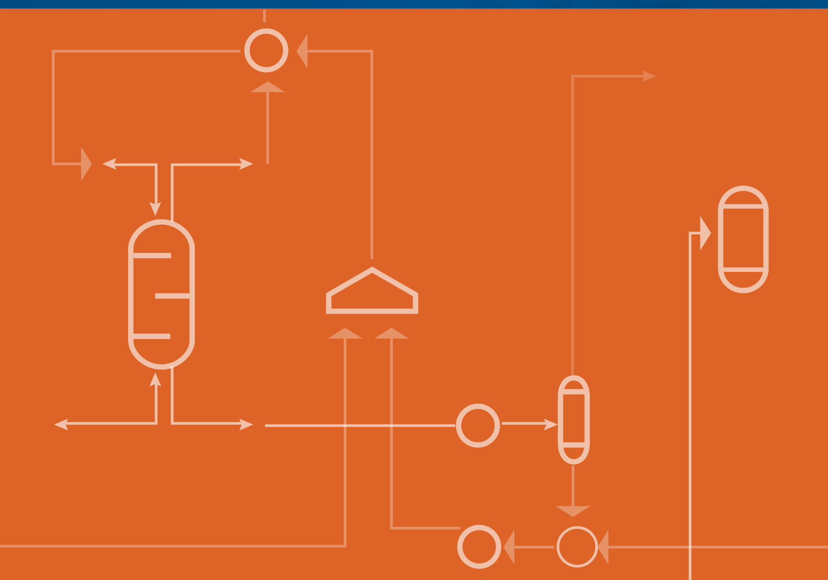
For VMGSim inputs and outputs, please see Page 3 of each of the VMGSim output files provided in this section (there is one output file for the PTE calculations and one for the actual emissions calculations).

VMGSim was selected because it is a sophisticated model that provides accurate estimates of flash emissions. From Schlumberger (the provider of VMGSim):

The Symmetry platform is powered by a best-in-class thermodynamic engine used for fluid representation, which is extensively validated against experimental data. The built-in database includes more than 20,000 chemicals, 80 thermodynamic property packages, and hundreds of unit operations, providing unparalleled model sophistication and precision.

Please see the attached brochure and VMG technical paper.

As noted above, Promax and VMGSim both use the AP-42 Chapter 7 equations/algorithms to calculate working/breathing losses. If VMGSim had been used to calculate the losses, results would have been essentially the same, except that unlike TANKS 4.0.9d, VMGSim does not provide access to the Albuquerque meteorological data.



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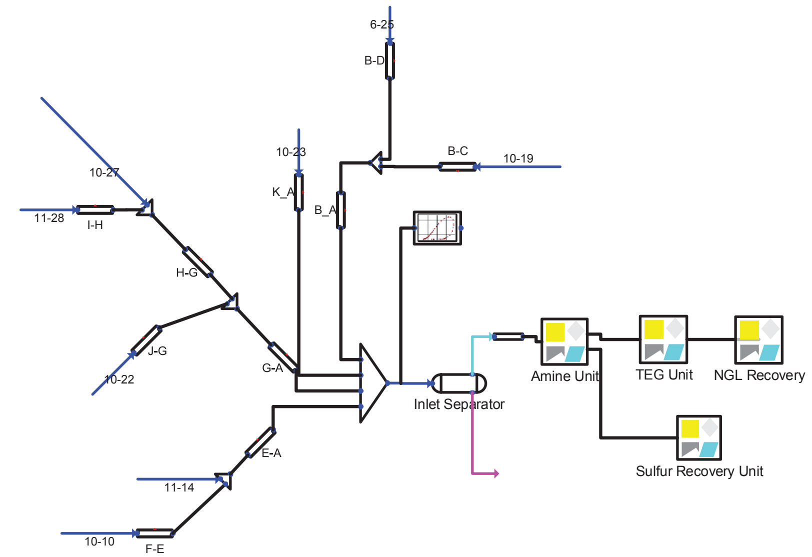
- **Oil Refining:** Oil characterization, crude oil distillation, refinery reactors
- **Heavy Oil/Oil Sands:** Property prediction for heavy oil, diluents, and bitumen
- **Gasification:** Flexible solid feed characterization, solid handling unit operations

INNOVATION BY DESIGN

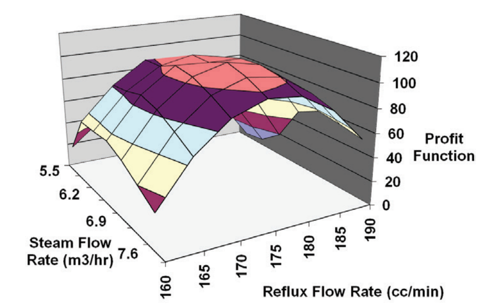
Plant-wide Model System
Integrate multiple sections of your plant and use innovative thermodynamic models to address each one of your process challenges to get a better sense of how changes in one section affect the whole plant.

Embed Custom Calculations
Integrate your calculations into your models with built-in VMGSim™ capabilities or use the live link to Microsoft Excel™ to create custom-made interfaces.

Open Models
Track the detailed distribution of hydrocarbons at every point in your process with an open model made available by our recent PIONA (paraffins, isoparaffins, olefins, naphthenes, aromatics) characterization.



BOOST PRODUCTIVITY



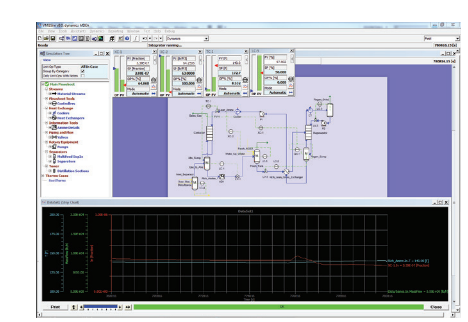
Get your team up to speed quickly, giving you more time to study your process with VMGSim's™ intuitive and user-friendly environment. Build your models in step with your projects and reuse your existing models to save time.

VMGSim™ comes with a suite of productivity tools, including:

- **Case Studies:** Create "what-if" scenarios to predict changes in your process
- **Model Regression Tool:** Integrate existing plant data to provide more realistic models
- **Optimizer:** Manipulate variables quickly and easily to reach your process goals

COMPLEXITY MADE EASY

- Add more complexity to your models by including different sections of your plant as you work
- Increase the detail of your models by using the sizing and rating capabilities in VMGSim™
- Characterize your oil with all of your experimental data
- Study the transient behaviour of your process with our rigorous and fully integrated dynamic simulation engine



Virtual Materials Group

Overview and Products

www.virtualmaterials.com

virtualmaterialsgroup INC

Introduction

Virtual Materials Group (VMG) is focused on developing high quality and cost-effective software for the Process Industries. VMG provides its clients with proven, validated and robust thermo-physical property prediction packages for the hydrocarbon, chemicals and petrochemical industry. VMG's thermodynamic models are backed by extensive experimental data and development support provided by the VMG technical support team.

More recently, VMG developed a new steady-state, process flowsheet simulation called VMGSim. This simulator uses the same interactive calculation principles of non-sequential, unit operation calculations with partial data flow, which were developed in the late 1970's in Calgary and which are used today by most process engineers in the oil & gas production industry. The steady-state process simulator integrates a state of the art steady state process simulation kernel combined with Microsoft Visio for extensive graphics capabilities and Excel for spreadsheet calculations. VMGSim provides affordable steady-state process simulation with uncompromising quality.

Virtual Materials Group also provides high level consulting in custom process simulator development, custom process model building, operator training simulator development and thermodynamic model development.

Background to VMG People

Most of the people involved in VMG have had extensive (15-25 years each) experience in thermodynamics and process simulation. One of the VMG partners founded Hyprotech and another developed and wrote most of HYSIM and then the original basis of HYSYS. The VMG development group has many years of writing, teaching and applying thermodynamic models to process simulation.

VMG's development team have been involved in thermodynamic modelling and creation of the software packages associated with thermodynamic modelling. VMG also has a close working relationship with the thermodynamic research group at NIST in the USA.

The basis of the flowsheet simulation program incorporates new ideas in flowsheet simulation relating to integrated tower models and sub-flowsheeting.

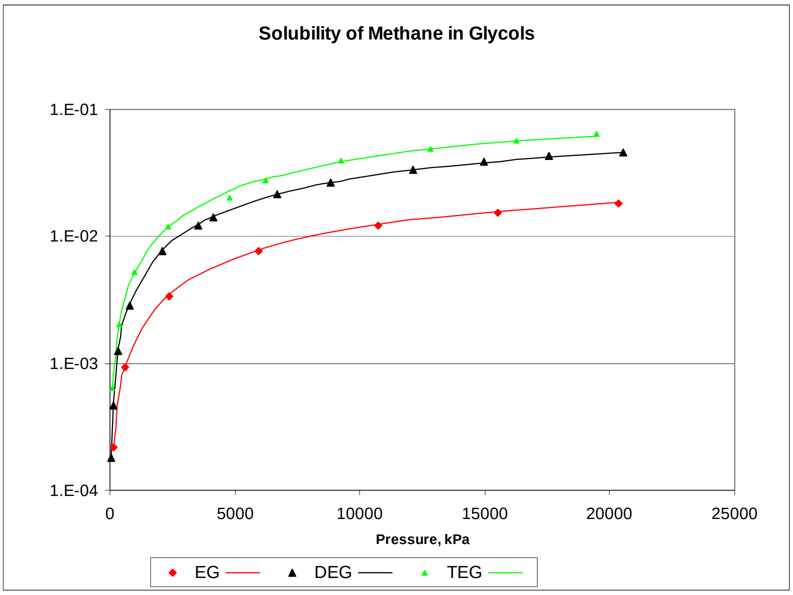
VMG's Associates around the world were all involved in marketing of, support of and user-training for HYSIM and HYSYS during the past 15-20 years. Most were involved in pioneering the move of process engineering software to personal computers and have remained involved as personal computers became the standard computer used for engineering calculations in the process industries. VMG's European Associate introduced PC-based process engineering to the European oil & gas industry in late 1984. The first licenses of such software in Europe were delivered in 1984. VMG's Associates in the USA, Japan, Far and Middle East were all involved in pioneering PC-based and interactive process simulation in their respective countries.

Oil & Gas Industry Applications

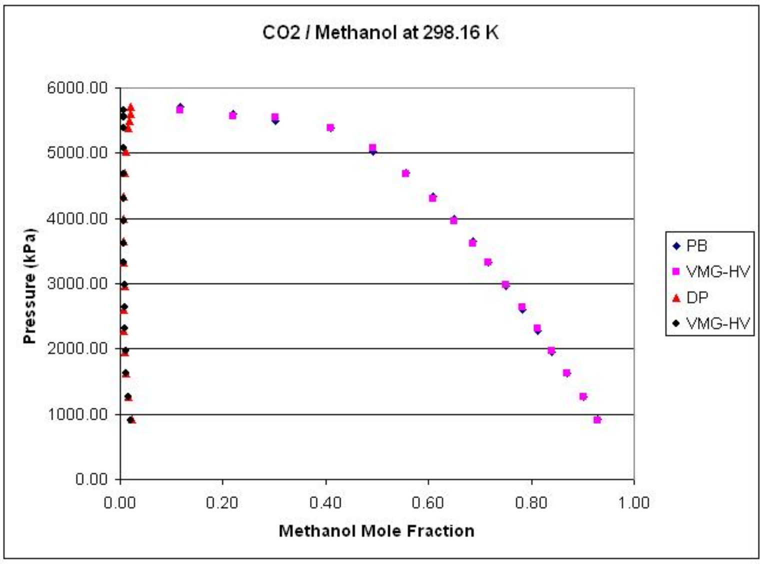
VMG have developed an advanced Peng-Robinson model within their thermodynamic package VMGThermo and initial work on VMG's steady-state process flowsheet simulator called VMGSim has been concentrated on the oil & gas production industry.

In addition to modelling "standard" hydrocarbon systems, VMG have recently paid special attention to extending their thermodynamic models towards accurate modelling of acid gas, mercury, glycols and hydrocarbons dissolved in glycols over wide operating ranges as well as taking salinity into account in the water phase for hydrate and hydrocarbon solubility predictions. The intention is to provide the oil & gas production industry with more accurate thermodynamic modelling than has been possible up to now.

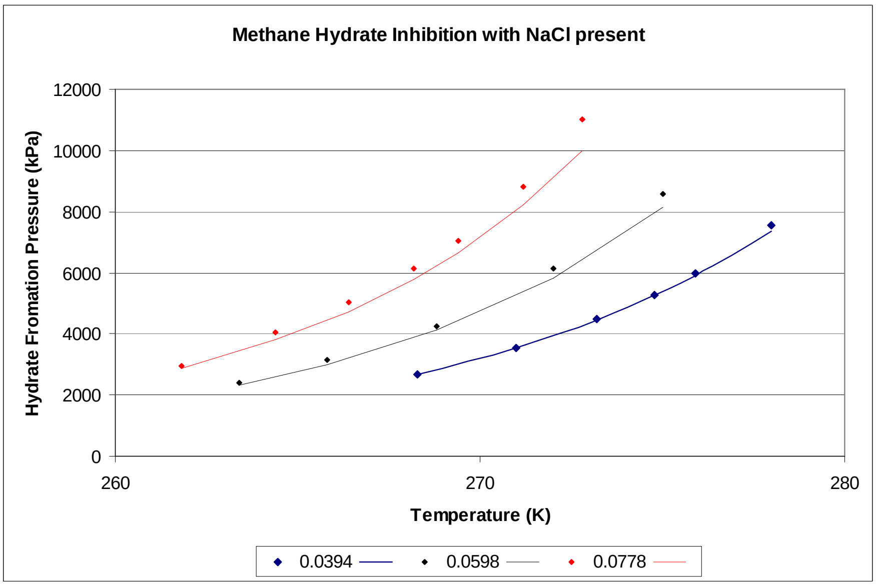
An example showing the experimental versus calculated values for solubility of methane in various glycols is shown below. This has been achieved by accurate fitting of vapour pressures for the components over wide ranges of temperatures then collection and validation of binary data which was then used to determine the thermodynamic model parameters.



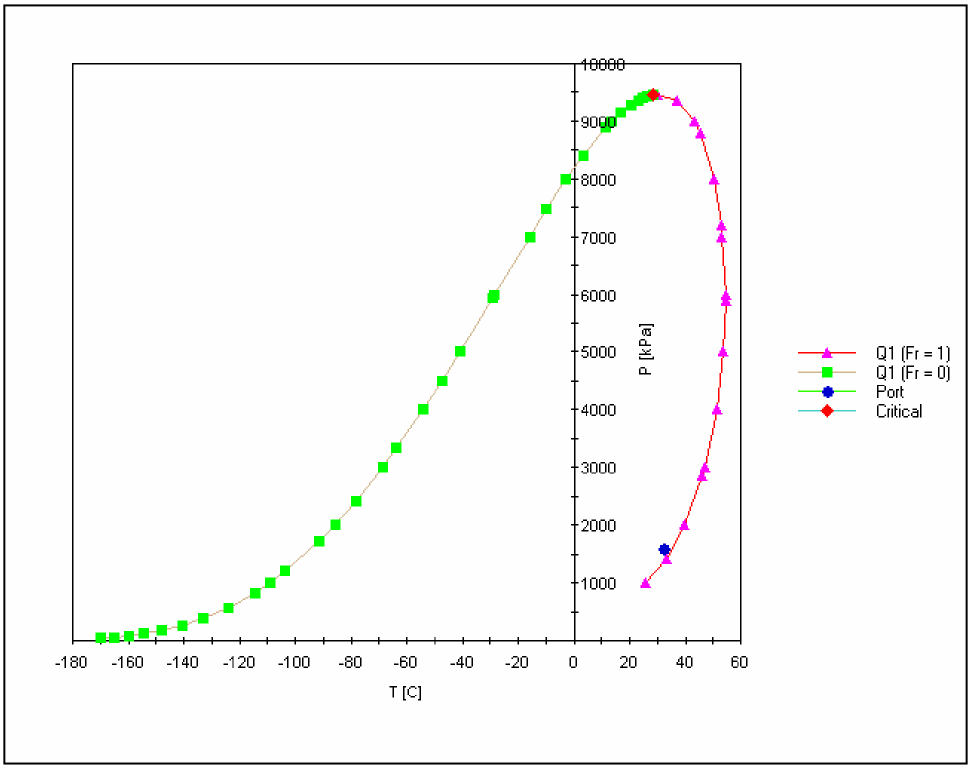
The Peng-Robinson model was extended to include a free energy term by Huron-Vidal and VMG's version of this powerful model is identified as GE-PR within the VMGThermo package. Calculation of the phase behaviour of CO2-methanol at 25°C over a range of pressures is shown in the diagram below with comparison to literature data.



Gas hydrates form in natural gas systems if water is present. The salinity of the water affects the hydrate formation temperature as the water activity is altered by the presence of salt. It is possible to predict this effect as shown below.



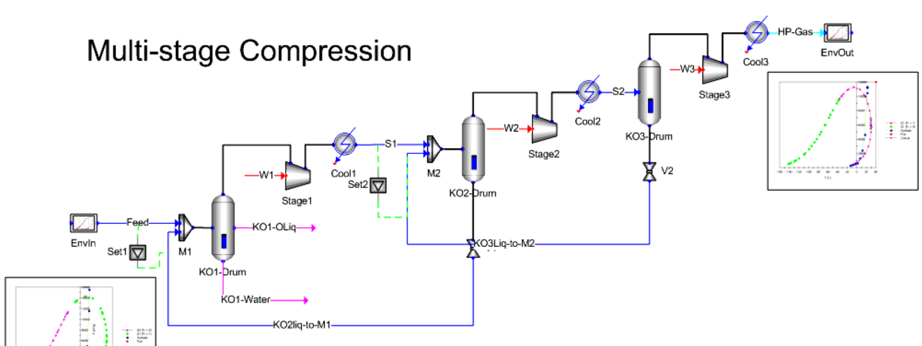
A phase envelope showing the dew and bubble point lines of a stream being produced from a reservoir is shown below. This was calculated within VMGSim using VMG's Advanced Peng Robinson thermodynamic model.



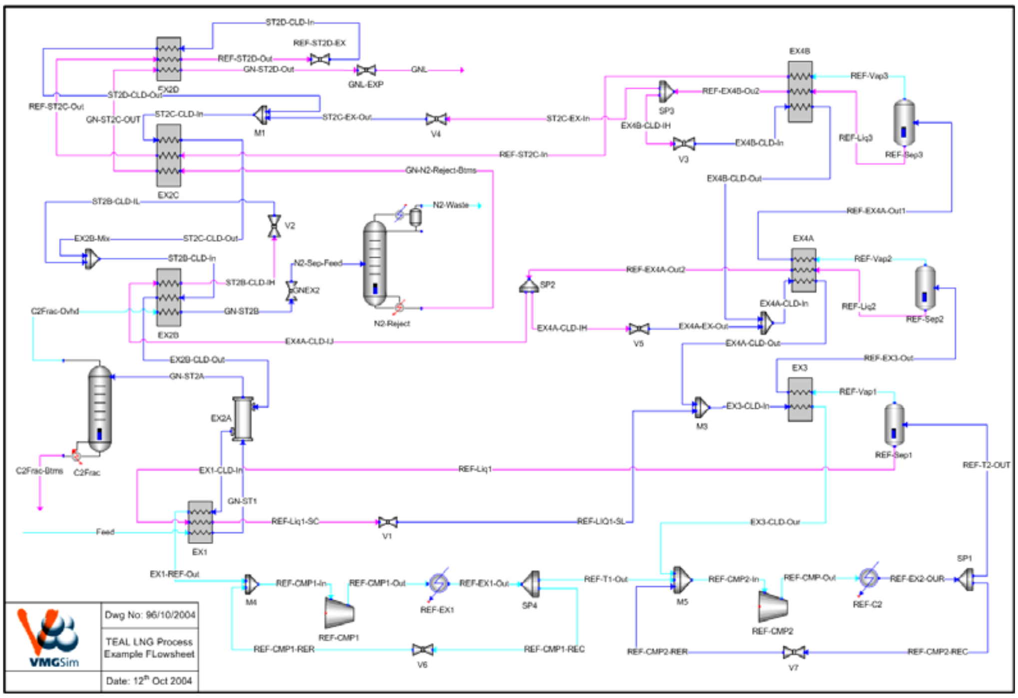
The true critical temperature and pressure of the stream as well as the cricondentherm and cricondenbar are also calculated and reported and shown below.

	P [kPa]	T [C]
Cricondenbar	9466.3	30.09
Cricondentherm	5886.9	54.44
Crit_P	9455.2	
Crit_T		28.34

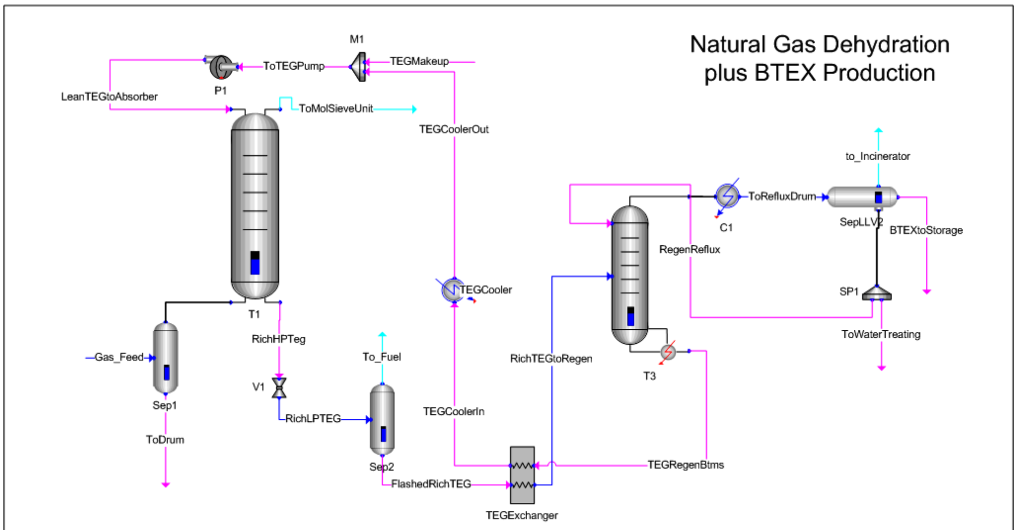
Using the graphic tool Microsoft Visio has enabled VMG to add PFD visualization to the simulation program. MS Visio can then be used outside the simulation program to enhance the PFD by addition of comments or graphic pictures such as phase envelopes as shown below.



Name	/Feed	/S1	/S2	/HP-Gas	/KO3Liq-to-M2	/KO2liq-to-M1	/KO1-OLiq	/KO1-Water
T [C]	30	30	30	40	23.445	25.915	29.059	29.059
P [kPa]	1500	3000	6000	12000	3000	1500	1500	1500
MoleFlow [kgmole/h]	3526.92	3167.998	3115.929	3081.772	34.158	86.228	127.051	318.099
Component Mole Flow								
WATER	320.62909	8.68602	4.63057	2.58449	2.04608	6.10152	0.07558	317.96901
NITROGEN	76.84413	76.87661	76.87373	76.76464	0.10908	0.11196	0.07811	0.00138
CARBON DIOXIDE	44.82574	44.86541	44.74493	44.45844	0.28643	0.40692	0.34007	0.02718
HYDROGEN SULFIDE	0	0	0	0	0	0	0	0
METHANE	2432.26953	2434.52245	2432.72067	2424.62629	8.09499	9.89684	7.55996	0.08396
ETHANE	276.47018	276.99342	274.90496	271.62742	3.27784	5.36634	4.83202	0.01109
PROPANE	117.21781	117.22633	114.14951	111.01609	3.13365	6.21052	6.19809	0.00391
ISOBUTANE	55.1793	54.56717	50.99928	48.32669	2.67263	6.24056	6.85227	0.00042
n-BUTANE	50.93474	49.55673	45.0513	42.1068	2.94466	7.45014	8.82688	0.00127
ISOPENTANE	38.20105	34.44107	28.23126	25.13192	3.09951	9.30939	13.06916	0.00022
n-PENTANE	36.50323	31.25407	24.37901	21.28482	3.09443	9.96957	15.21855	0.00019
n-HEXANE	77.84519	39.00876	19.24365	13.8447	5.39881	25.16383	64.00024	0.00002
Total	3526.92	3167.998	3115.929	3081.772	34.158	86.228	127.051	318.099



Further work on the thermodynamics has enabled accurate modelling of hydrocarbons dissolved in TEG so that modelling of a gas dehydration system specially designed for a high BTX content gas production system becomes possible. A schematic of the model with stream results is shown below.



Name	/Gas_Feed	/RichHPTeg	/LeanTEGtoAbsorber	/ToMolSieveUnit	/RichLPTEG	/To_Fuel	/to_Incinerator
T [C]	27.8	28.296	40.124	31.699	30.585	30.585	28
P [kPa]	6751.325	6620	6800	6600	701.325	701.325	121.325
MoleFlow [kgmole/h]	11361.2	511.511	474	11322.37	511.511	14.239	3.37
Component Mole Flow							
NITROGEN	2279.32	2.11448	0	2277.20531	2.11448	1.95832	0.15539
METHANE	8370.25	11.38486	0.00001	8358.86385	11.38486	10.05285	1.30981
ETHANE	454.04	2.09439	0.00002	451.94556	2.09439	1.32899	0.68789
PROPANE	121.46	1.01502	0.00003	120.445	1.01502	0.44672	0.40251
ISOBUTANE	34.05	0.35112	0.00004	33.69892	0.35112	0.12184	0.11166
n-BUTANE	32.92	0.53126	0.00012	32.38886	0.53126	0.12993	0.15468
ISOPENTANE	17.03	0.45758	0.00028	16.5727	0.45758	0.06312	0.07987
n-PENTANE	11.35	0.38418	0.00031	10.96613	0.38418	0.04265	0.05859
n-HEXANE	17.03	1.38597	0.00372	15.64775	1.38597	0.05783	0.07355
BENZENE	5.68	5.19149	0.13789	0.62637	5.19149	0.01543	0.18937
n-HEPTANE	3.4	0.69242	0.00646	2.71404	0.69242	0.00953	0.01216
TOLUENE	2.4	2.39989	0.13708	0.13718	2.39989	0.00401	0.02485
n-OCTANE	1.14	0.49917	0.01551	0.65634	0.49917	0.00216	0.00308
ETHYLBENZENE	0.16	0.1679	0.0133	0.00539	0.1679	0.00014	0.00059
p-XYLENE	0.77	0.80504	0.06305	0.02801	0.80504	0.00068	0.00242
n-NONANE	0.5	0.50374	0.05823	0.05449	0.50374	0.00053	0.00095
n-DECANE	0.5	0.67725	0.21706	0.0398	0.67725	0.00017	0.00035
n-UNDECANE	0.2	0.5093	0.3223	0.013	0.5093	0.00002	0.00005
TRIETHYLENE GLYCOL	0	436.22376	436.22524	0.00148	436.22376	0	0
WATER	9	44.12207	36.79936	0.35994	44.12207	0.00395	0.10254
Total	11361.2	511.511	474	11322.37	511.511	14.239	3.37

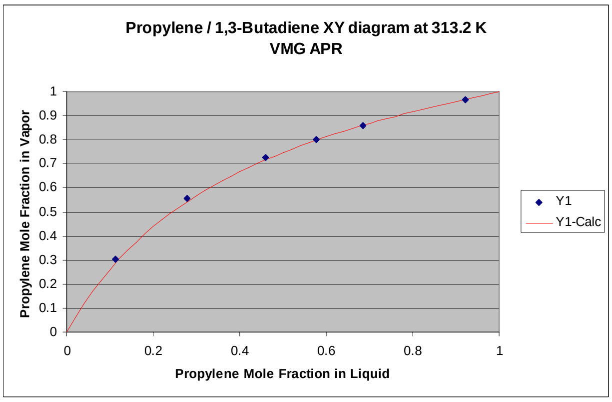
Name	/BTEXtoStorage	/TEGRegenBtms	/RichTEGtoRegen	/ToRefluxDrum	/ToDrum	/TEGMakeup	/ToTEGPump
T [C]	28	199.494	90	28	27.8	30	39
P [kPa]	121.325	126.325	651.325	121.325	6751.325	300	111.325
MoleFlow [kgmole/h]	12.696	474.002	497.272	122.77	1.319	-0.002	474
Component Mole Flow							
NITROGEN	0.00076	0	0.15616	0.15623	0.0002	0	0
METHANE	0.02212	0.00001	1.33202	1.33315	0.0013	0	0.00001
ETHANE	0.07743	0.00002	0.76539	0.76614	0.00007	0	0.00002
PROPANE	0.16573	0.00003	0.56829	0.56866	0.00001	0	0.00003
ISOBUTANE	0.11758	0.00004	0.22928	0.22927	0	0	0.00004
n-BUTANE	0.24652	0.00012	0.40133	0.40134	0	0	0.00012
ISOPENTANE	0.31431	0.00028	0.39446	0.3942	0	0	0.00028
n-PENTANE	0.28263	0.00031	0.34153	0.34123	0	0	0.00031
n-HEXANE	1.25087	0.00373	1.32814	1.32442	0	0	0.00373
BENZENE	4.84765	0.13791	5.17606	5.05387	0.00003	0	0.13791
n-HEPTANE	0.66427	0.00646	0.68289	0.67643	0	0	0.00646
TOLUENE	2.23373	0.1371	2.39688	2.26145	0.00001	0	0.1371
n-OCTANE	0.47842	0.01551	0.49701	0.48149	0	0	0.01551
ETHYLBENZENE	0.15387	0.0133	0.16777	0.15452	0	0	0.0133
p-XYLENE	0.73886	0.06306	0.80436	0.74164	0	0	0.06306
n-NONANE	0.44401	0.05825	0.50321	0.44497	0	0	0.05825
n-DECANE	0.45942	0.21731	0.67708	0.45977	0	0	0.21731
n-UNDECANE	0.18406	0.32518	0.50928	0.1841	0	0	0.32518
TRIETHYLENE GLYCOL	0	436.22374	436.22376	0.00021	0	-0.00165	436.22209
WATER	0.01396	36.79965	44.11811	106.79693	1.31734	-0.00036	36.79929
Total	12.696	474.002	497.272	122.77	1.319	-0.002	474

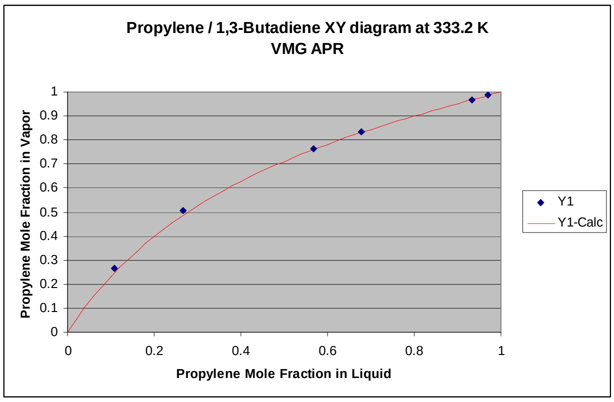
Name	/ToWaterTreating	/RegenReflux	/FlashedRichTEG	/TEGCoolerIn	/TEGCoolerOut	/Gas	/TEG
T [C]	28	28	30.585	152.97	39	27.8	40.124
P [kPa]	121.325	121.325	701.325	121.325	111.325	6751.325	6800
MoleFlow [kgmole/h]	7.204	99.5	497.272	474.002	474.002	11361.2	474
Component Mole Flow							
NITROGEN	0	0.00007	0.15616	0	0	2279.32	0
METHANE	0.00008	0.00115	1.33202	0.00001	0.00001	8370.25	0.00001
ETHANE	0.00006	0.00076	0.76539	0.00002	0.00002	454.04	0.00002
PROPANE	0.00003	0.0004	0.56829	0.00003	0.00003	121.46	0.00003
ISOBUTANE	0	0.00003	0.22928	0.00004	0.00004	34.05	0.00004
n-BUTANE	0.00001	0.00013	0.40133	0.00012	0.00012	32.92	0.00012
ISOPENTANE	0	0.00002	0.39446	0.00028	0.00028	17.03	0.00028
n-PENTANE	0	0.00001	0.34153	0.00031	0.00031	11.35	0.00031
n-HEXANE	0	0	1.32814	0.00373	0.00373	17.03	0.00372
BENZENE	0.00114	0.01572	5.17606	0.13791	0.13791	5.68	0.13789
n-HEPTANE	0	0	0.68289	0.00646	0.00646	3.4	0.00646
TOLUENE	0.00019	0.00268	2.39688	0.1371	0.1371	2.4	0.13708
n-OCTANE	0	0	0.49701	0.01551	0.01551	1.14	0.01551
ETHYLBENZENE	0	0.00005	0.16777	0.0133	0.0133	0.16	0.0133
p-XYLENE	0.00002	0.00034	0.80436	0.06306	0.06306	0.77	0.06305
n-NONANE	0	0	0.50321	0.05825	0.05825	0.5	0.05823
n-DECANE	0	0	0.67708	0.21731	0.21731	0.5	0.21706
n-UNDECANE	0	0	0.50928	0.32518	0.32518	0.2	0.3223
TRIETHYLENE GLYCOL	0.00001	0.0002	436.22376	436.22374	436.22374	0	436.22524
WATER	7.20203	99.47846	44.11811	36.79965	36.79965	9	36.79936
Total	7.204	99.5	497.272	474.002	474.002	11361.2	474

Petrochemical Applications

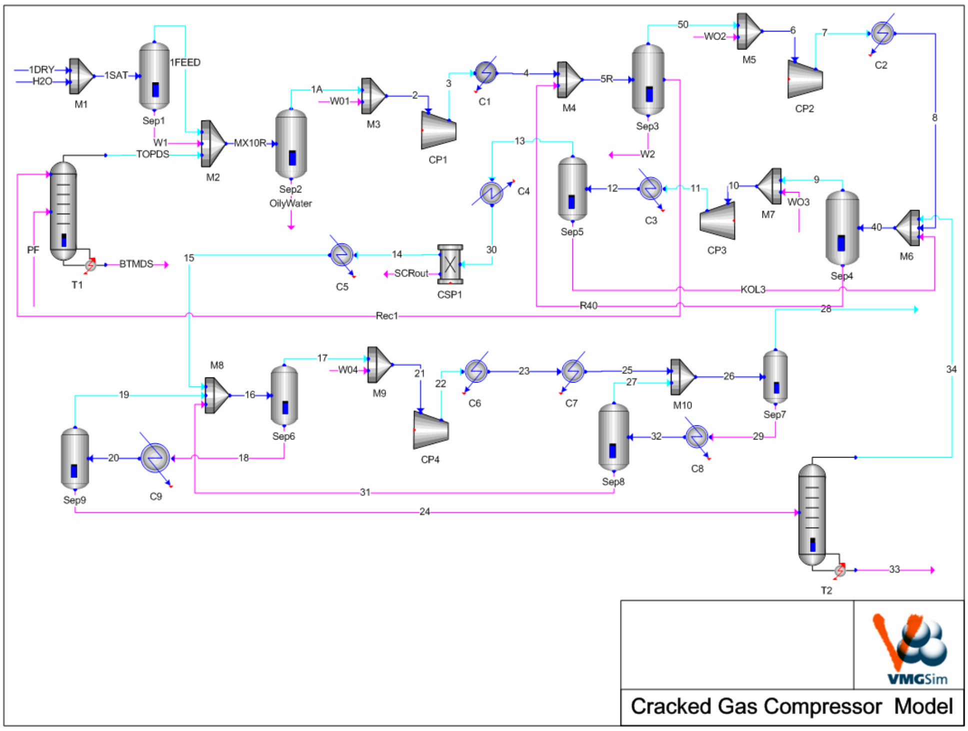
VMGThermo and VMGSim have also been applied to petrochemical applications such as modelling of ethylene and propylene plants.

An accurate phase behaviour prediction for the fractionation in such plants is vital to achieve correct prediction of the compositions of products, particularly in mixtures such as propylene and butadiene. A couple of validation curves (XY diagrams) at two different temperatures are shown below.

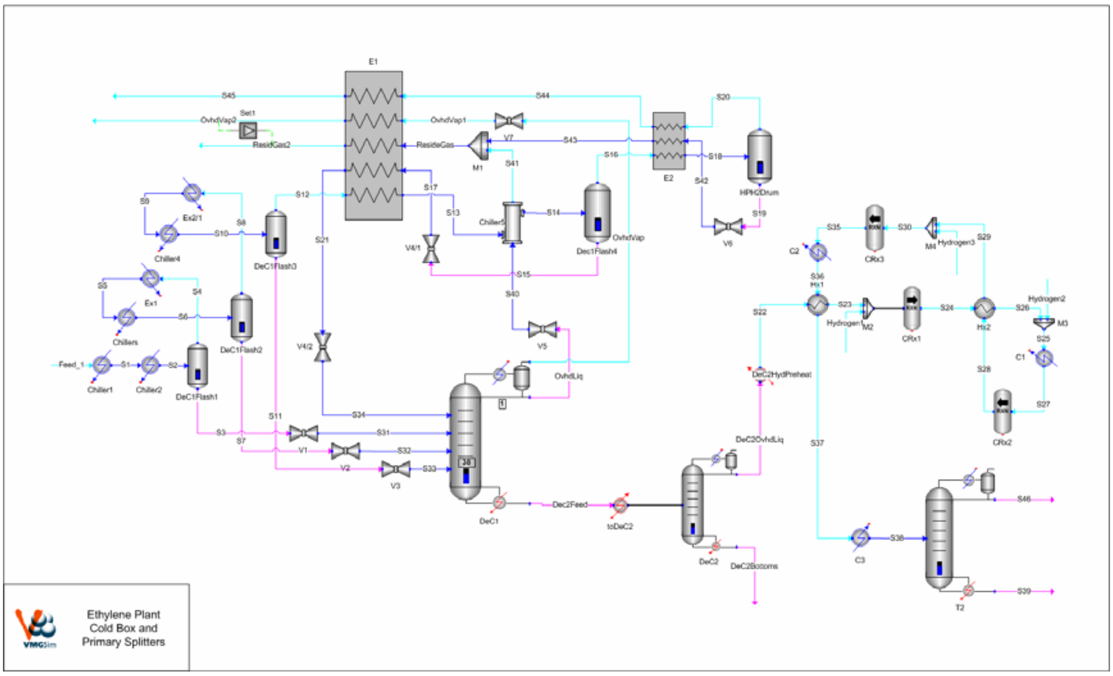




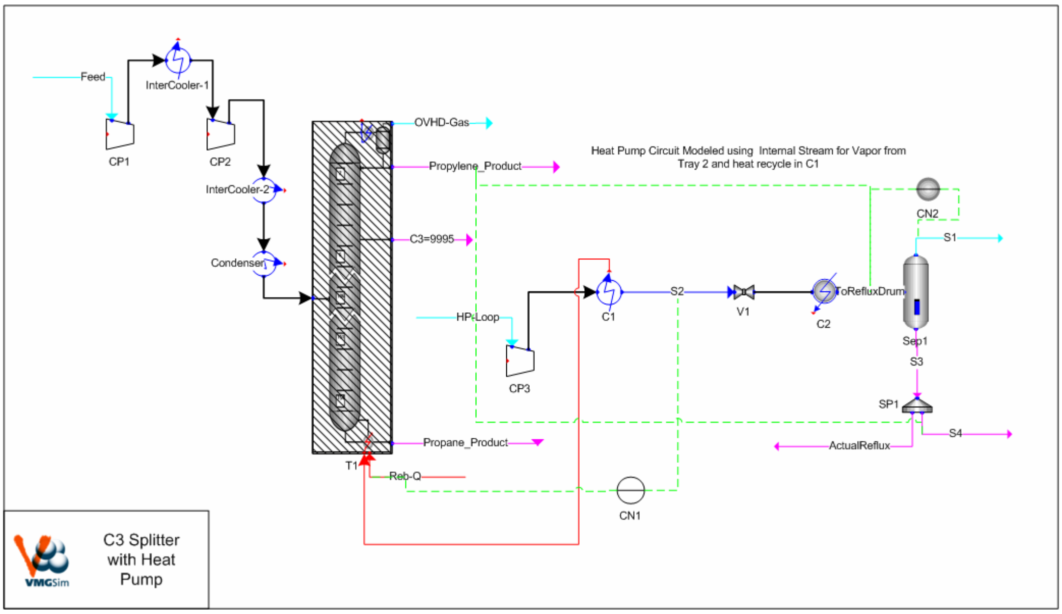
A series of example steady-state flowsheet models of sections from a typical ethylene plant were then developed:



The gas from the cracked gas compressor section is fed to the demethanizer section then the C2 components are split from the C2-rich liquid and in turn split into ethane and ethylene.



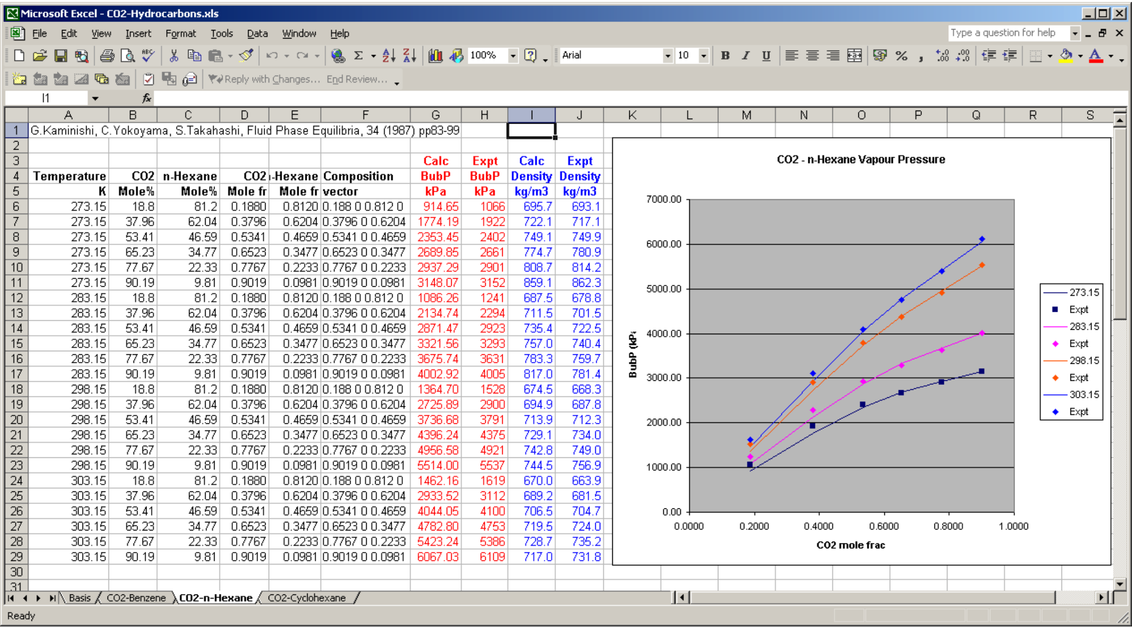
A simulation model schematic of a propane-propylene splitter with a heat pump system used to provide energy for the tower reboiler is shown below.



Other Applications of VMGThermo

VMGThermo is now being used by a number of software vendors in the process industries for thermodynamic property calculations within their own software. The vendor list includes HTRI (heat exchanger design), Ariel Compressors, Schmart (relief valves) and Neotec (multiphase flow and production forecasting).

VMGThermo may also be run directly from Excel. An example showing the calculation of vapour pressure of a range of CO2-n-Hexane mixtures for a series of temperatures is shown below.



Temperature K	CO2 Mole%	n-Hexane Mole%	CO2 Mole fr	n-Hexane Mole fr	Composition vector	Calc BubP kPa	Expt BubP kPa	Calc Density kg/m3	Expt Density kg/m3
273.15	18.8	81.2	0.1880	0.8120	0.188 0 0.812 0	914.65	1066	695.7	693.1
273.15	37.96	62.04	0.3796	0.6204	0.3796 0 0.6204	1774.19	1922	722.1	717.1
273.15	53.41	46.59	0.5341	0.4659	0.5341 0 0.4659	2353.45	2402	749.1	749.9
273.15	65.23	34.77	0.6523	0.3477	0.6523 0 0.3477	2689.85	2661	774.7	780.9
273.15	77.67	22.33	0.7767	0.2233	0.7767 0 0.2233	2937.29	2901	808.7	814.2
273.15	90.19	9.81	0.9019	0.0981	0.9019 0 0.0981	3148.07	3152	859.1	862.3
283.15	18.8	81.2	0.1880	0.8120	0.188 0 0.812 0	1086.26	1241	687.5	678.8
283.15	37.96	62.04	0.3796	0.6204	0.3796 0 0.6204	2134.74	2294	711.5	701.5
283.15	53.41	46.59	0.5341	0.4659	0.5341 0 0.4659	2871.47	2923	735.4	722.5
283.15	65.23	34.77	0.6523	0.3477	0.6523 0 0.3477	3321.56	3293	757.0	740.4
283.15	77.67	22.33	0.7767	0.2233	0.7767 0 0.2233	3675.74	3631	783.3	759.7
283.15	90.19	9.81	0.9019	0.0981	0.9019 0 0.0981	4002.92	4005	817.0	781.4
298.15	18.8	81.2	0.1880	0.8120	0.188 0 0.812 0	1364.70	1528	674.5	668.3
298.15	37.96	62.04	0.3796	0.6204	0.3796 0 0.6204	2725.89	2900	694.9	687.8
298.15	53.41	46.59	0.5341	0.4659	0.5341 0 0.4659	3736.68	3791	713.9	712.3
298.15	65.23	34.77	0.6523	0.3477	0.6523 0 0.3477	4396.24	4375	729.1	734.0
298.15	77.67	22.33	0.7767	0.2233	0.7767 0 0.2233	4956.58	4921	742.8	749.0
298.15	90.19	9.81	0.9019	0.0981	0.9019 0 0.0981	5514.00	5537	744.5	756.9
303.15	18.8	81.2	0.1880	0.8120	0.188 0 0.812 0	1462.16	1619	670.0	663.9
303.15	37.96	62.04	0.3796	0.6204	0.3796 0 0.6204	2933.52	3112	689.2	681.5
303.15	53.41	46.59	0.5341	0.4659	0.5341 0 0.4659	4044.05	4100	706.5	704.7
303.15	65.23	34.77	0.6523	0.3477	0.6523 0 0.3477	4782.80	4753	719.5	724.0
303.15	77.67	22.33	0.7767	0.2233	0.7767 0 0.2233	5423.24	5386	728.7	735.2
303.15	90.19	9.81	0.9019	0.0981	0.9019 0 0.0981	6067.03	6109	717.0	731.8

VMG will be developing a CAPE-OPEN interface for VMGThermo so that VMGThermo will be available for use with any CAPE-OPEN software package.

VMGThermo is also linked to IDEAS from IDEAS Simulation and formed the thermodynamic engine for a very large operator training system for an oil sands extraction plant in Alberta, which used a new solvent-based bitumen recovery process. During the process of development of the OTS the customer was also to check out the large process control system as well as identify and resolve problems in design of the control philosophy.

Conclusion

VMGThermo is a general thermodynamic package which applies to mixture of components found in the oil & gas, petrochemical and chemical process industries as well as certain specialised processes such as fatty acid production, sulphuric acid manufacture and urea fertilizer plants. VMGThermo is wrapped in a generalised callable package and may be used from programs written in FORTRAN, C++, Python and Visual Basic as well as having a direct link to Excel.

VMGThermo has been extensively tested and validated by VMG and a number of partner companies. VMGThermo has been used in many industrial applications. VMGThermo is linked to several equipment design programs to provide accurate thermophysical properties for use in design calculations.

VMGSim is a new interactive steady-state flowsheet simulator driven by VMGThermo. VMGSim offers some interesting new features, flexibility and capabilities to process engineers in the process engineering industry.

Section 5.5

Condensate Storage Tanks (Units T1 & T2)

PTE Emission Calculations

Condensate Storage Tank PTE Emissions Data and Calculations

Unit Number: T1 & T2
Description: Condensate Storage Tanks

Emission Rates

Source/Pollutants	Working/Breathing Losses, ppy	Working/Breathing Losses, tpy	Flash Losses, tpy	Uncontrolled Emission Rates, tpy	10% Safety Factor tpy
T1					
VOC	9,458.83	4.73	100.38	105.10	115.61
Benzene	34.39	1.72E-02	4.49E-01	4.66E-01	5.13E-01
Ethylbenzene	0.50	2.50E-04	5.59E-03	5.84E-03	6.42E-03
n-Hexane	1,289.93	6.45E-01	9.95	10.60	11.66
Isooctane	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Toluene	24.86	1.24E-02	2.75E-01	2.87E-01	3.16E-01
Xylene	2.85	1.43E-03	2.79E-02	2.93E-02	3.22E-02
T2					
VOC	9,932.45	4.97	--	4.97	
Benzene	36.11	1.81E-02	--	1.81E-02	
Ethylbenzene	0.52	2.60E-04	--	2.60E-04	
n-Hexane	1,354.52	6.77E-01	--	6.77E-01	
Isooctane	0.00	0.00E+00	--	0.00E+00	
Toluene	26.11	1.31E-02	--	1.31E-02	
Xylene	2.99	1.50E-03	--	1.50E-03	

Working/breathing losses taken from TANKS 4.0 results
Flash VOC emissions taken from VMGSim results
Flash HAP emissions calculated from the flash VOC emissions and the weight % HAP (calculated in the table below)
Unit T2 does not have flash emissions because it is an overflow tank for Unit T1. All flashing occurs in Unit T1.

Condensate Storage Tank PTE Emissions Data and Calculations

Unit Number: T1 & T2
Description: Condensate Storage Tanks

Flash Emissions Composition (To Determine HAP Emissions)

Components	Mole Percents, %	Molecular Weights, lb/lb-mole	Component Weights, lb/lb-mole	Weight Percent, %
Carbon dioxide	0.5433	44.010		
Hydrogen sulfide	0.0000	34.070		
Nitrogen	0.4004	28.013		
Water	0.0000	18.015		
Methane	21.6866	16.043		
Ethane	20.2810	30.070		
Propane	25.1557	44.097	1109.289	33.965
Isobutane	6.1816	58.123	359.293	11.001
n-Butane	11.4648	58.123	666.370	20.403
Isopentane	4.5748	72.150	330.073	10.106
n-Pentane	3.8944	72.150	280.979	8.603
Cyclopentane	0.0000	70.134	0.000	0.000
n-Hexane	3.7581	86.177	323.859	9.916
Cyclohexane	0.5328	84.161	44.839	1.373
Other hexanes	0.0000	86.177	0.000	0.000
Heptanes	1.0165	100.204	101.853	3.119
Methylcyclohexane	0.0000	98.188	0.000	0.000
Isooctane	0.0000	114.231	0.000	0.000
Benzene	0.1870	78.114	14.604	0.447
Toluene	0.0970	92.141	8.940	0.274
Ethylbenzene	0.0017	106.167	0.182	0.006
Xylenes	0.0085	106.167	0.907	0.028
n-Octane	0.2071	114.232	23.657	0.724
n-Nonane	0.0085	128.259	1.085	0.033
n-Decane	0.0003	142.286	0.041	0.001
Total	100.0000		3265.971	100.000

Gas stream composition obtained from VGMSym output
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)

Condensate Storage Tank PTE Emissions Data and Calculations

Unit Number: T1 & T2
Description: Condensate Storage Tanks

Condensate Composition (To Determine Working/Breathing Losses)

Components	Mole Percents, %	Molecular Weights, lb/lb-mole	Component Weights, lb/lb-mole	Weight Percent, %
Carbon dioxide	0.0078	44.010		
Hydrogen sulfide	0.0000	34.070		
Nitrogen	0.0005	28.013		
Water	0.0000	18.015		
Methane	0.1027	16.043		
Ethane	0.6729	30.070		
Propane	3.1038	44.097	136.8685	1.5414
Isobutane	2.0276	58.123	117.8498	1.3272
n-Butane	5.6863	58.123	330.5053	3.7221
Isopentane	6.1242	72.150	441.8645	4.9762
n-Pentane	6.7464	72.150	486.7492	5.4817
Cyclopentane	0.0000	70.134	0.0000	0.0000
n-Hexane	25.4671	86.177	2194.6743	24.7159
Cyclohexane	4.9821	84.161	419.2976	4.7220
Other hexanes	0.0000	86.177	0.0000	0.0000
Heptanes	23.0538	100.204	2310.0869	26.0157
Methylcyclohexane	0.0000	98.188	0.0000	0.0000
Isooctane	0.0000	114.231	0.0000	0.0000
Benzene	1.2121	78.114	94.6820	1.0663
Toluene	2.5643	92.141	236.2760	2.6609
Ethylbenzene	0.1322	106.167	14.0390	0.1581
Xylenes	0.9039	106.167	95.9682	1.0808
n-Octane	14.9754	114.232	1710.6720	19.2652
n-Nonane	2.0107	128.259	257.8897	2.9043
n-Decane	0.2262	142.286	32.1815	0.3624
Total	100.0000		8879.6046	100.0000

Gas stream composition obtained from VGMSym output
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)
In TANKS 4, the propane percentage is included with isobutane and n-butane (an even distribution)
distribution)

Simulation Report

File Name:	2018 Los Mestenios Emissions Flash Model 22141 bpy
Company:	VMG, a Schlumberger Technology
Customer:	
Project:	
Job No:	
Prepared By:	
Report Date:	Friday, October 21, 2022
Unit Set:	Field

File: U:\Environmental\Condensate Flash Calcs\Los Mestenios 17755 BBL 2017 to 2022\2018 Los Mestenios

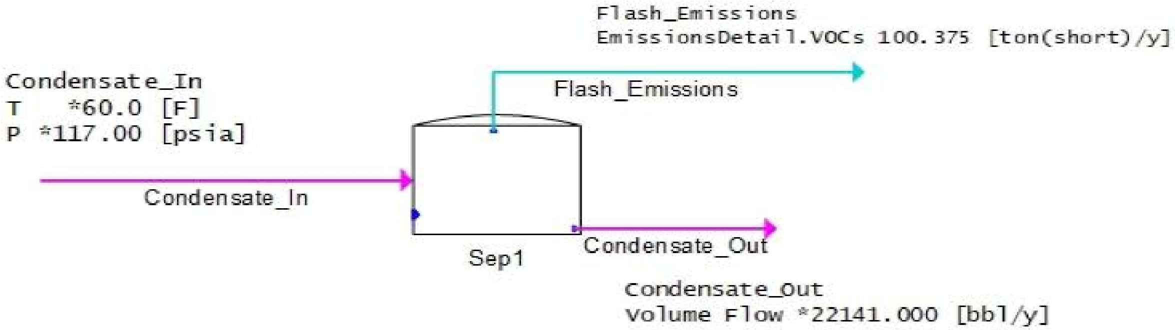
Symmetry

Main Flowsheet

Material Stream (3)
2ph Separator (1)

*Bold face throughout the report denotes specified values.

*Italic face throughout the report denotes recycle values.



Flash_Emissions
EmissionsDetail.VOCs 100.375 [ton(short)/y]
Condensate_In
T *60.0 [F]
P *117.00 [psia]
Flash_Emissions
Condensate_In
Sep1
Condensate_Out
Condensate_Out
Volume Flow *22141.000 [bbl/y]

Symmetry

Input Condensate Temperature:	60	°F
Input Condensate Pressure:	117	psia
Output Condensdate Flow:	22,141	bbl/yr
Output Condensate Flow:	60.66	bbl/day
VOC Emission Rate:	100.38	tpy

/Condensate_In (Material Stream)

Thermo Model: APRNGL2

Connections

Material Inlets

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

Material Outlets

	Connection	Down Stream Unit Op
Out	Sep1.In0	---

Allocation / Product Allocation

Auto Calculate	**False**	Is Up To Date	False
Status	Y?No Results		

Equilibrium Results

	Bulk	**Vap**	**Liq0**	**Liq1**
Phase Frac [Fraction]	1.00	0.00	1.00	0.00
T [F]	60.0	60.0	60.0	60.0
P [psia]	117.00	117.00	117.00	117.00
Mole Flow [lbmol/h]	7.49	0.00	7.49	0.00
Mass Flow [lb/h]	633.74	0.00	633.74	0.00
Fraction [Fraction]				
NITROGEN	3.80E-04	0.0441	3.80E-04	3.80E-04
METHANE	0.0213	0.6940	0.0213	0.0213
CARBON DIOXIDE	5.80E-04	0.0064	5.80E-04	5.80E-04
ETHANE	0.0251	0.1236	0.0251	0.0251
PROPANE	0.0517	0.0712	0.0517	0.0517
ISOBUTANE	0.0242	0.0129	0.0242	0.0242
n-BUTANE	0.0623	0.0223	0.0623	0.0623
ISOPENTANE	0.0598	0.0082	0.0598	0.0598
n-PENTANE	0.0648	0.0069	0.0648	0.0648
CYCLOPENTANE	0.00	0.00	0.00	0.00
n-HEXANE	0.2343	0.0067	0.2343	0.2343
METHYLCYCLOHEXANE	0.00	0.00	0.00	0.00
2,2,4-TRIMETHYLPENTANE	0.00	0.00	0.00	0.00
BENZENE	0.0112	3.26E-04	0.0112	0.0112
CYCLOHEXANE	0.0457	9.41E-04	0.0457	0.0457
n-HEPTANE	0.2099	0.0019	0.2099	0.2099
TOLUENE	0.0233	1.74E-04	0.0233	0.0233
n-OCTANE	0.1359	3.94E-04	0.1359	0.1359
ETHYLBENZENE	0.0012	3.21E-06	0.0012	0.0012
m-XYLENE	0.0082	1.60E-05	0.0082	0.0082
o-XYLENE	0.00	0.00E+00	0.00	0.00
n-NONANE	0.0182	1.67E-05	0.0182	0.0182
n-DECANE	0.0021	5.98E-07	0.0021	0.0021
n-UNDECANE	0.00	0.00E+00	0.00	0.00
n-DODECANE	0.00	0.00E+00	0.00	0.00
WATER	0.00	0.00E+00	0.00	0.00

/Condensate_Out (Material Stream)

Thermo Model: APRNGL2

Connections

Material Inlets

	Connection	Up Stream Unit Op
In	Sep1.Liq0	---

Material Outlets

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

Allocation / Product Allocation

Auto Calculate	**False**	Is Up To Date	False
Status	Y?No Results		

Equilibrium Results

	Bulk	**Vap**	**Liq0**	**Liq1**
Phase Frac [Fraction]	1.00	0.00	1.00	
T [F]	60.0	60.0	60.0	
P [psia]	13.00	13.00	13.00	
Mole Flow [lbmol/h]	6.78	0.00	6.78	
Mass Flow [lb/h]	603.86	0.00	603.86	
Fraction [Fraction]				
NITROGEN	5.16E-06	0.0040	5.16E-06	
METHANE	0.0010	0.2169	0.0010	
CARBON DIOXIDE	7.80E-05	0.0054	7.80E-05	
ETHANE	0.0067	0.2028	0.0067	
PROPANE	0.0310	0.2516	0.0310	
ISOBUTANE	0.0203	0.0618	0.0203	
n-BUTANE	0.0569	0.1146	0.0569	
ISOPENTANE	0.0612	0.0457	0.0612	
n-PENTANE	0.0675	0.0389	0.0675	
CYCLOPENTANE	0.00	0.00	0.00	
n-HEXANE	0.2547	0.0376	0.2547	
METHYLCYCLOHEXANE	0.00	0.00	0.00	
2,2,4-TRIMETHYLPENTANE	0.00	0.00	0.00	
BENZENE	0.0121	0.0019	0.0121	
CYCLOHEXANE	0.0498	0.0053	0.0498	
n-HEPTANE	0.2305	0.0102	0.2305	
TOLUENE	0.0256	9.70E-04	0.0256	
n-OCTANE	0.1498	0.0021	0.1498	
ETHYLBENZENE	0.0013	1.71E-05	0.0013	
m-XYLENE	0.0090	8.54E-05	0.0090	
o-XYLENE	0.00	0.00E+00	0.00	
n-NONANE	0.0201	8.46E-05	0.0201	
n-DECANE	0.0023	2.91E-06	0.0023	
n-UNDECANE	0.00	0.00E+00	0.00	
n-DODECANE	0.00	0.00E+00	0.00	
WATER	0.00	0.00E+00	0.00	

/Flash_Emissions (Material Stream)

Thermo Model: APRNGL2

Connections

Material Inlets

	Connection	Up Stream Unit Op
In	Sep1.Vap	---

Material Outlets

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

Allocation / Product Allocation

Auto Calculate	**False**	Is Up To Date	False
Status	Y?No Results		

Equilibrium Results

	Bulk	**Vap**	**Liq0**	**Liq1**
Phase Frac [Fraction]	1.00	1.00	0.00E+00	
T [F]	60.0	60.0	60.0	
P [psia]	13.00	13.00	13.00	
Mole Flow [lbmol/h]	0.70	0.70	0.00	
Mass Flow [lb/h]	29.88	29.88	0.00	
Fraction [Fraction]				
NITROGEN	0.0040	0.0040	5.16E-06	
METHANE	0.2169	0.2169	0.0010	
CARBON DIOXIDE	0.0054	0.0054	7.80E-05	
ETHANE	0.2028	0.2028	0.0067	
PROPANE	0.2516	0.2516	0.0310	
ISOBUTANE	0.0618	0.0618	0.0203	
n-BUTANE	0.1146	0.1146	0.0569	
ISOPENTANE	0.0457	0.0457	0.0612	
n-PENTANE	0.0389	0.0389	0.0675	
CYCLOPENTANE	0.00	0.00	0.00	
n-HEXANE	0.0376	0.0376	0.2547	
METHYLCYCLOHEXANE	0.00	0.00	0.00	
2,2,4-TRIMETHYLPENTANE	0.00	0.00	0.00	
BENZENE	0.0019	0.0019	0.0121	
CYCLOHEXANE	0.0053	0.0053	0.0498	
n-HEPTANE	0.0102	0.0102	0.2305	
TOLUENE	9.70E-04	9.70E-04	0.0256	
n-OCTANE	0.0021	0.0021	0.1498	
ETHYLBENZENE	1.71E-05	1.71E-05	0.0013	
m-XYLENE	8.54E-05	8.54E-05	0.0090	
o-XYLENE	0.00E+00	0.00E+00	0.00	
n-NONANE	8.46E-05	8.46E-05	0.0201	
n-DECANE	2.91E-06	2.91E-06	0.0023	
n-UNDECANE	0.00E+00	0.00E+00	0.00	
n-DODECANE	0.00E+00	0.00E+00	0.00	
WATER	0.00E+00	0.00E+00	0.00	

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

Identification

User Identification:	Los Mestenios - T1 - Condensate (PTE)
City:	Gavilan
State:	New Mexico
Company:	Harvest Four Corners, LLC
Type of Tank:	Vertical Fixed Roof Tank
Description:	400 Barrel Condensate Storage Tank

Tank Dimensions

Shell Height (ft):	20.00
Diameter (ft):	12.00
Liquid Height (ft) :	19.00
Avg. Liquid Height (ft):	9.50
Volume (gallons):	16,075.00
Turnovers:	57.85
Net Throughput(gal/yr):	929,922.00
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:	Dome
Height (ft)	0.00
Radius (ft) (Dome Roof)	12.00

Breather Vent Settings

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

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

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

Los Mestenios - T1 - Condensate (PTE) - Vertical Fixed Roof Tank
Gavilan, New Mexico

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Condensate	All	67.36	53.93	80.79	59.23	5.6924	4.3318	7.1442	66.3202			90.18	
Benzene						1.4274	0.9846	2.0237	78.1100	0.0107	0.0036	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Butane (-n)						29.9357	23.3576	34.6684	58.1230	0.0449	0.3213	58.12	Option 1: VP60 = 26.1 VP70 = 31.31
Cyclohexane						1.4738	1.0254	2.0729	84.1600	0.0472	0.0166	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Decane (-n)						0.0395	0.0291	0.0536	142.2900	0.0036	0.0000	142.29	Option 1: VP60 = .033211 VP70 = .041762
Ethylbenzene						0.1396	0.0876	0.2162	106.1700	0.0016	0.0001	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Heptane (-n)						0.7600	0.5088	1.1128	100.2000	0.2602	0.0472	100.20	Option 3: A=37358, B=8.2585
Hexane (-n)						2.3100	1.6303	3.2059	86.1700	0.2472	0.1364	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Iso-Butane						43.3083	34.4026	53.8185	58.1230	0.0210	0.2170	58.12	Option 1: VP60 = 38.14 VP70 = 45.16
Isopentane						11.8640	8.7212	15.5743	72.1500	0.0498	0.1410	72.15	Option 1: VP60 = 10.005 VP70 = 12.53
Nonane (-n)						0.0784	0.0568	0.1080	128.2600	0.0290	0.0005	128.26	Option 1: VP60 = .065278 VP70 = .08309
Octane (-n)						0.1769	0.1254	0.2493	114.2300	0.1927	0.0081	114.23	Option 1: VP60 = .145444 VP70 = .188224
Pentane (-n)						8.0308	5.9649	10.6537	72.1500	0.0548	0.1052	72.15	Option 3: A=27691, B=7.558
Toluene						0.4136	0.2726	0.6120	92.1300	0.0266	0.0026	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Xylenes (mixed isomers)						0.1165	0.0728	0.1813	106.1700	0.0108	0.0003	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)

Los Mestenios - T1 - Condensate (PTE) - Vertical Fixed Roof Tank
Gavilan, New Mexico

Annual Emission Calcaulations	
Standing Losses (lb):	3,731.0793
Vapor Space Volume (cu ft):	1,280.6108
Vapor Density (lb/cu ft):	0.0668
Vapor Space Expansion Factor:	0.5281
Vented Vapor Saturation Factor:	0.2264
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	1,280.6108
Tank Diameter (ft):	12.0000
Vapor Space Outage (ft):	11.3231
Tank Shell Height (ft):	20.0000
Average Liquid Height (ft):	9.5000
Roof Outage (ft):	0.8231
Roof Outage (Dome Roof)	
Roof Outage (ft):	0.8231
Dome Radius (ft):	12.0000
Shell Radius (ft):	6.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0668
Vapor Molecular Weight (lb/lb-mole):	66.3202
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.6924
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:	0.5281
Daily Vapor Temperature Range (deg. R):	53.7176
Daily Vapor Pressure Range (psia):	2.8124
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.6924
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	4.3318
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	7.1442
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:	0.2264
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):	5.6924
Vapor Space Outage (ft):	11.3231
Working Losses (lb):	5,727.7476

Vapor Molecular Weight (lb/lb-mole):	66.3202
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.6924
Annual Net Throughput (gal/yr.):	929,922.0000
Annual Turnovers:	57.8500
Turnover Factor:	0.6852
Maximum Liquid Volume (gal):	16,075.0000
Maximum Liquid Height (ft):	19.0000
Tank Diameter (ft):	12.0000
Working Loss Product Factor:	1.0000
Total Losses (lb):	9,458.8269

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

Emissions Report for: Annual

Los Mestenios - T1 - Condensate (PTE) - Vertical Fixed Roof Tank
Gavilan, New Mexico

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Condensate	5,727.75	3,731.08	9,458.83
Iso-Butane	1,242.99	809.69	2,052.68
Butane (-n)	1,840.05	1,198.62	3,038.67
Pentane (-n)	602.29	392.34	994.63
Hexane (-n)	781.11	508.82	1,289.93
Cyclohexane	95.21	62.02	157.24
Heptane (-n)	270.52	176.22	446.73
Benzene	20.82	13.57	34.39
Toluene	15.06	9.81	24.86
Ethylbenzene	0.30	0.20	0.50
Xylenes (mixed isomers)	1.72	1.12	2.85
Octane (-n)	46.64	30.38	77.02
Nonane (-n)	3.11	2.03	5.14
Decane (-n)	0.20	0.13	0.32
Isopentane	807.72	526.15	1,333.87

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

Identification	
User Identification:	Los Mestenios - T2 - Condensate (PTE)
City:	Gavilan
State:	New Mexico
Company:	Harvest Four Corners, LLC
Type of Tank:	Vertical Fixed Roof Tank
Description:	400 Barrel Condensate Storage Tank
Tank Dimensions	
Shell Height (ft):	12.83
Diameter (ft):	15.50
Liquid Height (ft) :	11.83
Avg. Liquid Height (ft):	6.00
Volume (gallons):	16,800.00
Turnovers:	27.68
Net Throughput(gal/yr):	464,961.00
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:	Dome
Height (ft)	0.00
Radius (ft) (Dome Roof)	12.00
Breather Vent Settings	
Vacuum Settings (psig):	-0.03
Pressure Settings (psig)	0.03

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

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

Los Mestenios - T2 - Condensate (PTE) - Vertical Fixed Roof Tank
Gavilan, New Mexico

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Condensate	All	67.36	53.93	80.79	59.23	5.6924	4.3318	7.1442	66.3202			90.18	
Benzene						1.4274	0.9846	2.0237	78.1100	0.0107	0.0036	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Butane (-n)						29.9357	23.3576	34.6684	58.1230	0.0449	0.3213	58.12	Option 1: VP60 = 26.1 VP70 = 31.31
Cyclohexane						1.4738	1.0254	2.0729	84.1600	0.0472	0.0166	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Decane (-n)						0.0395	0.0291	0.0536	142.2900	0.0036	0.0000	142.29	Option 1: VP60 = .033211 VP70 = .041762
Ethylbenzene						0.1396	0.0876	0.2162	106.1700	0.0016	0.0001	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Heptane (-n)						0.7600	0.5088	1.1128	100.2000	0.2602	0.0472	100.20	Option 3: A=37358, B=8.2585
Hexane (-n)						2.3100	1.6303	3.2059	86.1700	0.2472	0.1364	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Iso-Butane						43.3083	34.4026	53.8185	58.1230	0.0210	0.2170	58.12	Option 1: VP60 = 38.14 VP70 = 45.16
Isopentane						11.8640	8.7212	15.5743	72.1500	0.0498	0.1410	72.15	Option 1: VP60 = 10.005 VP70 = 12.53
Nonane (-n)						0.0784	0.0568	0.1080	128.2600	0.0290	0.0005	128.26	Option 1: VP60 = .065278 VP70 = .08309
Octane (-n)						0.1769	0.1254	0.2493	114.2300	0.1927	0.0081	114.23	Option 1: VP60 = .145444 VP70 = .188224
Pentane (-n)						8.0308	5.9649	10.6537	72.1500	0.0548	0.1052	72.15	Option 3: A=27691, B=7.558
Toluene						0.4136	0.2726	0.6120	92.1300	0.0266	0.0026	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Xylenes (mixed isomers)						0.1165	0.0728	0.1813	106.1700	0.0108	0.0003	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)

Los Mestenios - T2 - Condensate (PTE) - Vertical Fixed Roof Tank
Gavilan, New Mexico

Annual Emission Calcaulations	
Standing Losses (lb):	5,753.1321
Vapor Space Volume (cu ft):	1,568.5156
Vapor Density (lb/cu ft):	0.0668
Vapor Space Expansion Factor:	0.5281
Vented Vapor Saturation Factor:	0.2851
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	1,568.5156
Tank Diameter (ft):	15.5000
Vapor Space Outage (ft):	8.3126
Tank Shell Height (ft):	12.8300
Average Liquid Height (ft):	6.0000
Roof Outage (ft):	1.4826
Roof Outage (Dome Roof)	
Roof Outage (ft):	1.4826
Dome Radius (ft):	12.0000
Shell Radius (ft):	7.7500
Vapor Density	
Vapor Density (lb/cu ft):	0.0668
Vapor Molecular Weight (lb/lb-mole):	66.3202
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.6924
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:	0.5281
Daily Vapor Temperature Range (deg. R):	53.7176
Daily Vapor Pressure Range (psia):	2.8124
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.6924
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	4.3318
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	7.1442
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:	0.2851
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):	5.6924
Vapor Space Outage (ft):	8.3126
Working Losses (lb):	4,179.3172

Vapor Molecular Weight (lb/lb-mole):	66.3202
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.6924
Annual Net Throughput (gal/yr.):	464,961.0000
Annual Turnovers:	27.6800
Turnover Factor:	1.0000
Maximum Liquid Volume (gal):	16,800.0000
Maximum Liquid Height (ft):	11.8300
Tank Diameter (ft):	15.5000
Working Loss Product Factor:	1.0000

Total Losses (lb):	9,932.4493

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

Emissions Report for: Annual

Los Mestenios - T2 - Condensate (PTE) - Vertical Fixed Roof Tank
Gavilan, New Mexico

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Condensate	4,179.32	5,753.13	9,932.45
Iso-Butane	906.96	1,248.50	2,155.46
Butane (-n)	1,342.61	1,848.21	3,190.82
Isopentane	589.36	811.30	1,400.66
Benzene	15.19	20.92	36.11
Toluene	10.99	15.12	26.11
Pentane (-n)	439.47	604.96	1,044.43
Hexane (-n)	569.95	784.57	1,354.52
Ethylbenzene	0.22	0.30	0.52
Xylenes (mixed isomers)	1.26	1.73	2.99
Octane (-n)	34.03	46.84	80.87
Nonane (-n)	2.27	3.13	5.40
Decane (-n)	0.14	0.20	0.34
Cyclohexane	69.47	95.64	165.11
Heptane (-n)	197.38	271.71	469.10

Section 5.5

Condensate Storage Tanks (Units T1 & T2)

Actual Emission Calculations

Condensate Storage Tank Actual Emissions Data and Calculations

Unit Number: T1 & T2
Description: Condensate Storage Tanks

Emission Rates

Source/Pollutants	Working/Breathing Losses, ppy	Working/Breathing Losses, tpy	Flash Losses, tpy	Uncontrolled Emission Rates, tpy
T1				
VOC	2,803.84	1.40	5.72	7.12
Benzene	15.56	7.78E-03	4.01E-02	4.79E-02
Ethylbenzene	0.85	4.25E-04	1.98E-03	2.41E-03
n-Hexane	242.18	1.21E-01	4.49E-01	5.70E-01
Isooctane	3.04	1.52E-03	5.32E-03	6.84E-03
Toluene	2.04	1.02E-03	4.64E-03	5.66E-03
Xylene	3.40	1.70E-03	9.60E-03	1.13E-02
T2				
VOC	3,257.57	1.63	--	1.63
Benzene	18.08	9.04E-03	--	9.04E-03
Ethylbenzene	0.99	4.95E-04	--	4.95E-04
n-Hexane	281.37	1.41E-01	--	1.41E-01
Isooctane	3.54	1.77E-03	--	1.77E-03
Toluene	2.37	1.19E-03	--	1.19E-03
Xylene	3.95	1.98E-03	--	1.98E-03

Working/breathing losses taken from TANKS 4.0 results
Flash VOC emissions taken from VMGSim results
Flash HAP emissions calculated from the flash VOC emissions and the weight % HAP (calculated in the table below)
Unit T2 does not have flash emissions because it is an overflow tank for Unit T1. All flashing occurs in Unit T1.

Condensate Storage Tank Actual Emissions Data and Calculations

Unit Number: T1 & T2
Description: Condensate Storage Tanks

Flash Emissions Composition (To Determine HAP Emissions)

Components	Mole Percents, %	Molecular Weights, lb/lb-mole	Component Weights, lb/lb-mole	Weight Percent, %
Carbon dioxide	0.1288	44.010		
Hydrogen sulfide	0.0000	34.070		
Nitrogen	1.6104	28.013		
Water	0.0000	18.015		
Methane	62.5659	16.043		
Ethane	9.7156	30.070		
Propane	2.9900	44.097	131.850	7.865
Isobutane	4.4177	58.123	256.770	15.316
n-Butane	8.4598	58.123	491.706	29.329
Isopentane	4.0103	72.150	289.346	17.259
n-Pentane	2.7352	72.150	197.345	11.771
Cyclopentane	0.0141	70.134	0.986	0.059
n-Hexane	1.5277	86.177	131.652	7.853
Cyclohexane	0.4003	84.161	33.686	2.009
Other hexanes	0.0000	86.177	0.000	0.000
Heptanes	1.0140	100.204	101.608	6.061
Methylcyclohexane	0.0000	98.188	0.000	0.000
Isooctane	0.0137	114.231	1.560	0.093
Benzene	0.1504	78.114	11.747	0.701
Toluene	0.0148	92.141	1.359	0.081
Ethylbenzene	0.0055	106.167	0.580	0.035
Xylenes	0.0265	106.167	2.816	0.168
n-Octane	0.1540	114.232	17.595	1.049
n-Nonane	0.0409	128.259	5.250	0.313
n-Decane	0.0045	142.286	0.641	0.038
Total	100.0000		1676.497	100.000

Gas stream composition obtained from VGMSym output
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)

Condensate Storage Tank Actual Emissions Data and Calculations

Unit Number: T1 & T2
Description: Condensate Storage Tanks

Condensate Composition (To Determine Working/Breathing Losses)

Components	Mole Percents, %	Molecular Weights, lb/lb-mole	Component Weights, lb/lb-mole	Weight Percent, %
Carbon dioxide	0.0019	44.010		
Hydrogen sulfide	0.0000	34.070		
Nitrogen	0.0020	28.013		
Water	0.0000	18.015		
Methane	0.2919	16.043		
Ethane	0.3081	30.070		
Propane	0.3598	44.097	15.8642	0.1520
Isobutane	1.4337	58.123	83.3327	0.7985
n-Butane	4.1675	58.123	242.2289	2.3211
Isopentane	5.4021	72.150	389.7591	3.7348
n-Pentane	4.8392	72.150	349.1468	3.3457
Cyclopentane	0.0485	70.134	3.4002	0.0326
n-Hexane	10.3589	86.177	892.6951	8.5542
Cyclohexane	4.2658	84.161	359.0121	3.4402
Other hexanes	0.0000	86.177	0.0000	0.0000
Heptanes	22.7383	100.204	2278.4709	21.8333
Methylcyclohexane	0.0000	98.188	0.0000	0.0000
Isooctane	0.3093	114.231	35.3280	0.3385
Benzene	1.1881	78.114	92.8089	0.8893
Toluene	0.4562	92.141	42.0352	0.4028
Ethylbenzene	0.4896	106.167	51.9800	0.4981
Xylenes	2.3418	106.167	248.6262	2.3824
n-Octane	12.2941	114.232	1404.3772	13.4573
n-Nonane	9.7927	128.259	1256.0008	12.0355
n-Decane	18.9106	142.286	2690.7109	25.7835
Total	100.0000		10435.7771	100.0000

Gas stream composition obtained from VGMSym output
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)
In TANKS 4, the propane percentage is included with isobutane and n-butane (an even distribution)

Simulation Report	
File Name:	2021 Los Mestenios Emissions Actual 11.21.2022
Company:	VMG, a Schlumberger Technology
Customer:	
Project:	
Job No:	
Prepared By:	
Report Date:	Monday, November 21, 2022
Unit Set:	Field

File: C:\Users\nwork.HEC-HOU\OneDrive - Hilcorp\Environmental\Condensate Flash Calcs\Los Mestenios 1

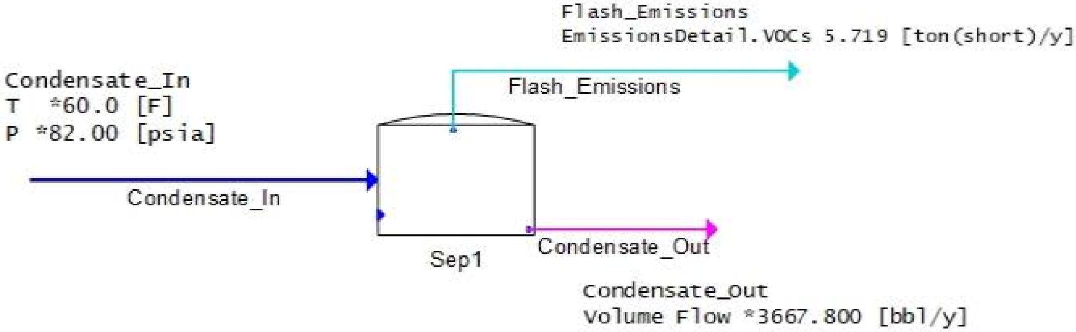
Symmetry

Main Flowsheet

Material Stream (3)
2ph Separator (1)

*Bold face throughout the report denotes specified values.

*Italic face throughout the report denotes recycle values.


Flash_Emissions
EmissionsDetail.VOCs 5.719 [ton(short)/y]
Condensate_In
T *60.0 [F]
P *82.00 [psia]
Flash_Emissions
Condensate_In
Sep1
Condensate_Out
Condensate_Out
Volume Flow *3667.800 [bbl/y]

Symmetry

Input Condensate Temperature:	60	°F
Input Condensate Pressure:	82	psia
Output Condensdate Flow:	3,668	bbl/yr
Output Condensate Flow:	10.05	bbl/day
VOC Emission Rate:	5.72	tpy

/Condensate_In (Material Stream)

Thermo Model: APRNGL2

Connections

Material Inlets

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

Material Outlets

	Connection	Down Stream Unit Op
Out	Sep1.In0	---

Allocation / Product Allocation

Auto Calculate	**False**	Is Up To Date	False
Status	Y?No Results		

Equilibrium Results

	Bulk	**Vap**	**Liq0**	**Liq1**
Phase Frac [Fraction]	1.00	0.0289	0.9711	0.00
T [F]	60.0	60.0	60.0	60.0
P [psia]	82.00	82.00	82.00	82.00
Mole Flow [lbmol/h]	1.04	0.03	1.01	0.00
Mass Flow [lb/h]	106.48	0.59	105.90	0.00
Fraction [Fraction]				
NITROGEN	0.0012	0.0336	2.62E-04	0.0012
METHANE	0.0496	0.8677	0.0252	0.0496
CARBON DIOXIDE	1.14E-04	9.83E-04	8.81E-05	1.14E-04
ETHANE	0.0101	0.0471	0.0090	0.0101
PROPANE	0.0056	0.0077	0.0055	0.0056
ISOBUTANE	0.0166	0.0089	0.0168	0.0166
n-BUTANE	0.0449	0.0161	0.0458	0.0449
ISOPENTANE	0.0530	0.0071	0.0543	0.0530
n-PENTANE	0.0468	0.0048	0.0481	0.0468
CYCLOPENTANE	4.59E-04	2.43E-05	4.72E-04	4.59E-04
n-HEXANE	0.0970	0.0027	0.0998	0.0970
METHYLCYCLOHEXANE	0.00	0.00	0.00	0.00
2,2,4-TRIMETHYLPENTANE	0.0029	2.43E-05	0.0030	0.0029
BENZENE	0.0111	2.60E-04	0.0114	0.0111
CYCLOHEXANE	0.0398	6.96E-04	0.0409	0.0398
n-HEPTANE	0.2111	0.0018	0.2173	0.2111
TOLUENE	0.0042	2.59E-05	0.0044	0.0042
n-OCTANE	0.1041	2.79E-04	0.1072	0.1041
ETHYLBENZENE	0.0045	9.81E-06	0.0047	0.0045
m-XYLENE	0.0217	3.53E-05	0.0223	0.0217
o-XYLENE	0.0098	1.23E-05	0.0101	0.0098
n-NONANE	0.0906	7.56E-05	0.0933	0.0906
n-DECANE	0.00	0.00E+00	0.00	0.00
n-UNDECANE	0.0875	6.63E-06	0.0901	0.0875
n-DODECANE	0.0875	2.13E-06	0.0901	0.0875
WATER	0.00	0.00E+00	0.00	0.00

/Condensate_Out (Material Stream)

Thermo Model: APRNGL2

Connections

Material Inlets

	Connection	Up Stream Unit Op
In	Sep1.Liq0	---

Material Outlets

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

Allocation / Product Allocation

Auto Calculate	**False**	Is Up To Date	False
Status	Y?No Results		

Equilibrium Results

	Bulk	**Vap**	**Liq0**	**Liq1**
Phase Frac [Fraction]	1.00	0.00	1.00	
T [F]	60.0	60.0	60.0	
P [psia]	13.00	13.00	13.00	
Mole Flow [lbmol/h]	0.96	0.00	0.96	
Mass Flow [lb/h]	104.13	0.00	104.13	
Fraction [Fraction]				
NITROGEN	1.98E-05	0.0161	1.98E-05	
METHANE	0.0029	0.6257	0.0029	
CARBON DIOXIDE	1.88E-05	0.0013	1.88E-05	
ETHANE	0.0031	0.0972	0.0031	
PROPANE	0.0036	0.0299	0.0036	
ISOBUTANE	0.0143	0.0442	0.0143	
n-BUTANE	0.0417	0.0846	0.0417	
ISOPENTANE	0.0540	0.0401	0.0540	
n-PENTANE	0.0484	0.0274	0.0484	
CYCLOPENTANE	4.85E-04	1.41E-04	4.85E-04	
n-HEXANE	0.1036	0.0153	0.1036	
METHYLCYCLOHEXANE	0.00	0.00	0.00	
2,2,4-TRIMETHYLPENTANE	0.0031	1.37E-04	0.0031	
BENZENE	0.0119	0.0015	0.0119	
CYCLOHEXANE	0.0427	0.0040	0.0427	
n-HEPTANE	0.2274	0.0101	0.2274	
TOLUENE	0.0046	1.48E-04	0.0046	
n-OCTANE	0.1124	0.0015	0.1124	
ETHYLBENZENE	0.0049	5.47E-05	0.0049	
m-XYLENE	0.0234	1.97E-04	0.0234	
o-XYLENE	0.0106	6.84E-05	0.0106	
n-NONANE	0.0979	4.09E-04	0.0979	
n-DECANE	0.00	0.00E+00	0.00	
n-UNDECANE	0.0946	3.43E-05	0.0946	
n-DODECANE	0.0946	1.08E-05	0.0946	
WATER	0.00	0.00E+00	0.00	

/Flash_Emissions (Material Stream)

Thermo Model: APRNGL2

Connections

Material Inlets

	Connection	Up Stream Unit Op
In	Sep1.Vap	---

Material Outlets

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

Allocation / Product Allocation

Auto Calculate	**False**	Is Up To Date	False
Status	Y?No Results		

Equilibrium Results

	Bulk	**Vap**	**Liq0**	**Liq1**
Phase Frac [Fraction]	1.00	1.00	0.00E+00	
T [F]	60.0	60.0	60.0	
P [psia]	13.00	13.00	13.00	
Mole Flow [lbmol/h]	0.08	0.08	0.00	
Mass Flow [lb/h]	2.35	2.35	0.00	
Fraction [Fraction]				
NITROGEN	0.0161	0.0161	1.98E-05	
METHANE	0.6257	0.6257	0.0029	
CARBON DIOXIDE	0.0013	0.0013	1.88E-05	
ETHANE	0.0972	0.0972	0.0031	
PROPANE	0.0299	0.0299	0.0036	
ISOBUTANE	0.0442	0.0442	0.0143	
n-BUTANE	0.0846	0.0846	0.0417	
ISOPENTANE	0.0401	0.0401	0.0540	
n-PENTANE	0.0274	0.0274	0.0484	
CYCLOPENTANE	1.41E-04	1.41E-04	4.85E-04	
n-HEXANE	0.0153	0.0153	0.1036	
METHYLCYCLOHEXANE	0.00	0.00	0.00	
2,2,4-TRIMETHYLPENTANE	1.37E-04	1.37E-04	0.0031	
BENZENE	0.0015	0.0015	0.0119	
CYCLOHEXANE	0.0040	0.0040	0.0427	
n-HEPTANE	0.0101	0.0101	0.2274	
TOLUENE	1.48E-04	1.48E-04	0.0046	
n-OCTANE	0.0015	0.0015	0.1124	
ETHYLBENZENE	5.47E-05	5.47E-05	0.0049	
m-XYLENE	1.97E-04	1.97E-04	0.0234	
o-XYLENE	6.84E-05	6.84E-05	0.0106	
n-NONANE	4.09E-04	4.09E-04	0.0979	
n-DECANE	0.00E+00	0.00E+00	0.00	
n-UNDECANE	3.43E-05	3.43E-05	0.0946	
n-DODECANE	1.08E-05	1.08E-05	0.0946	
WATER	0.00E+00	0.00E+00	0.00	

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

Identification

User Identification:	Los Mestenios - T1 - Condensate (ACT)
City:	Gavilan
State:	New Mexico
Company:	Harvest Four Corners, LLC
Type of Tank:	Vertical Fixed Roof Tank
Description:	400 Barrel Condensate Storage Tank

Tank Dimensions

Shell Height (ft):	20.00
Diameter (ft):	12.00
Liquid Height (ft) :	19.00
Avg. Liquid Height (ft):	9.50
Volume (gallons):	16,075.00
Turnovers:	9.58
Net Throughput(gal/yr):	154,048.00
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:	Dome
Height (ft)	0.00
Radius (ft) (Dome Roof)	12.00

Breather Vent Settings

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

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

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

Los Mestenios - T1 - Condensate (ACT) - Vertical Fixed Roof Tank
Gavilan, New Mexico

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Condensate	All	67.36	53.93	80.79	59.23	3.5613	2.6970	4.4885	67.5024			105.08	
2,2,4-Trimethylpentane (isooctane)						0.7338	0.4989	1.0546	114.2300	0.0034	0.0011	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
Benzene						1.4274	0.9846	2.0237	78.1100	0.0089	0.0055	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Butane (-n)						29.9357	23.3576	34.6684	58.1230	0.0240	0.3137	58.12	Option 1: VP60 = 26.1 VP70 = 31.31
Cyclohexane						1.4738	1.0254	2.0729	84.1600	0.0344	0.0222	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Cyclopentane						4.9596	3.6370	6.6394	70.1300	0.0003	0.0007	70.13	Option 1: VP60 = 4.177 VP70 = 5.24
Decane (-n)						0.0395	0.0291	0.0536	142.2900	0.2578	0.0045	142.29	Option 1: VP60 = .033211 VP70 = .041762
Ethylbenzene						0.1396	0.0876	0.2162	106.1700	0.0050	0.0003	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Heptane (-n)						0.7600	0.5088	1.1128	100.2000	0.2183	0.0725	100.20	Option 3: A=37358, B=8.2585
Hexane (-n)						2.3100	1.6303	3.2059	86.1700	0.0855	0.0864	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Iso-Butane						43.3083	34.4026	53.8185	58.1230	0.0087	0.1656	58.12	Option 1: VP60 = 38.14 VP70 = 45.16
Isopentane						11.8640	8.7212	15.5743	72.1500	0.0373	0.1937	72.15	Option 1: VP60 = 10.005 VP70 = 12.53
Nonane (-n)						0.0784	0.0568	0.1080	128.2600	0.1204	0.0041	128.26	Option 1: VP60 = .065278 VP70 = .08309
Octane (-n)						0.1769	0.1254	0.2493	114.2300	0.1346	0.0104	114.23	Option 1: VP60 = .145444 VP70 = .188224
Pentane (-n)						8.0308	5.9649	10.6537	72.1500	0.0335	0.1174	72.15	Option 3: A=27691, B=7.558
Toluene						0.4136	0.2726	0.6120	92.1300	0.0040	0.0007	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Xylenes (mixed isomers)						0.1165	0.0728	0.1813	106.1700	0.0238	0.0012	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)

Los Mestenios - T1 - Condensate (ACT) - Vertical Fixed Roof Tank
Gavilan, New Mexico

Annual Emission Calcaulations	
Standing Losses (lb):	1,922.1111
Vapor Space Volume (cu ft):	1,280.6108
Vapor Density (lb/cu ft):	0.0425
Vapor Space Expansion Factor:	0.3035
Vented Vapor Saturation Factor:	0.3188
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	1,280.6108
Tank Diameter (ft):	12.0000
Vapor Space Outage (ft):	11.3231
Tank Shell Height (ft):	20.0000
Average Liquid Height (ft):	9.5000
Roof Outage (ft):	0.8231
Roof Outage (Dome Roof)	
Roof Outage (ft):	0.8231
Dome Radius (ft):	12.0000
Shell Radius (ft):	6.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0425
Vapor Molecular Weight (lb/lb-mole):	67.5024
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	3.5613
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:	0.3035
Daily Vapor Temperature Range (deg. R):	53.7176
Daily Vapor Pressure Range (psia):	1.7915
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	3.5613
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	2.6970
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	4.4885
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:	0.3188
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):	3.5613
Vapor Space Outage (ft):	11.3231
Working Losses (lb):	881.7326

Vapor Molecular Weight (lb/lb-mole):	67.5024
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	3.5613
Annual Net Throughput (gal/yr.):	154,048.0000
Annual Turnovers:	9.5800
Turnover Factor:	1.0000
Maximum Liquid Volume (gal):	16,075.0000
Maximum Liquid Height (ft):	19.0000
Tank Diameter (ft):	12.0000
Working Loss Product Factor:	1.0000
Total Losses (lb):	2,803.8438

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

Emissions Report for: Annual

Los Mestenios - T1 - Condensate (ACT) - Vertical Fixed Roof Tank
Gavilan, New Mexico

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Condensate	881.73	1,922.11	2,803.84
Iso-Butane	145.97	318.21	464.18
Butane (-n)	276.57	602.91	879.49
Isopentane	170.78	372.28	543.06
Pentane (-n)	103.56	225.75	329.31
Cyclopentane	0.62	1.36	1.98
Hexane (-n)	76.16	166.02	242.18
Cyclohexane	19.54	42.60	62.14
Heptane (-n)	63.96	139.42	203.37
Benzene	4.89	10.67	15.56
Toluene	0.64	1.40	2.04
Ethylbenzene	0.27	0.58	0.85
Xylenes (mixed isomers)	1.07	2.33	3.40
Octane (-n)	9.18	20.01	29.18
Nonane (-n)	3.64	7.93	11.56
Decane (-n)	3.93	8.56	12.48
2,2,4-Trimethylpentane (isooctane)	0.96	2.09	3.04

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

Identification

User Identification:	Los Mestenios - T2 - Condensate (ACT)
City:	Gavilan
State:	New Mexico
Company:	Harvest Four Corners, LLC
Type of Tank:	Vertical Fixed Roof Tank
Description:	400 Barrel Condensate Storage Tank

Tank Dimensions

Shell Height (ft):	12.83
Diameter (ft):	15.50
Liquid Height (ft) :	11.83
Avg. Liquid Height (ft):	6.00
Volume (gallons):	16,800.00
Turnovers:	4.58
Net Throughput(gal/yr):	77,024.00
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:	Dome
Height (ft)	0.00
Radius (ft) (Dome Roof)	15.50

Breather Vent Settings

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

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

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

Los Mestenios - T2 - Condensate (ACT) - Vertical Fixed Roof Tank
Gavilan, New Mexico

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Condensate	All	67.36	53.93	80.79	59.23	3.5613	2.6970	4.4885	67.5024			105.08	
2,2,4-Trimethylpentane (isooctane)						0.7338	0.4989	1.0546	114.2300	0.0034	0.0011	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
Benzene						1.4274	0.9846	2.0237	78.1100	0.0089	0.0055	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Butane (-n)						29.9357	23.3576	34.6684	58.1230	0.0240	0.3137	58.12	Option 1: VP60 = 26.1 VP70 = 31.31
Cyclohexane						1.4738	1.0254	2.0729	84.1600	0.0344	0.0222	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Cyclopentane						4.9596	3.6370	6.6394	70.1300	0.0003	0.0007	70.13	Option 1: VP60 = 4.177 VP70 = 5.24
Decane (-n)						0.0395	0.0291	0.0536	142.2900	0.2578	0.0045	142.29	Option 1: VP60 = .033211 VP70 = .041762
Ethylbenzene						0.1396	0.0876	0.2162	106.1700	0.0050	0.0003	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Heptane (-n)						0.7600	0.5088	1.1128	100.2000	0.2183	0.0725	100.20	Option 3: A=37358, B=8.2585
Hexane (-n)						2.3100	1.6303	3.2059	86.1700	0.0855	0.0864	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Iso-Butane						43.3083	34.4026	53.8185	58.1230	0.0087	0.1656	58.12	Option 1: VP60 = 38.14 VP70 = 45.16
Isopentane						11.8640	8.7212	15.5743	72.1500	0.0373	0.1937	72.15	Option 1: VP60 = 10.005 VP70 = 12.53
Nonane (-n)						0.0784	0.0568	0.1080	128.2600	0.1204	0.0041	128.26	Option 1: VP60 = .065278 VP70 = .08309
Octane (-n)						0.1769	0.1254	0.2493	114.2300	0.1346	0.0104	114.23	Option 1: VP60 = .145444 VP70 = .188224
Pentane (-n)						8.0308	5.9649	10.6537	72.1500	0.0335	0.1174	72.15	Option 3: A=27691, B=7.558
Toluene						0.4136	0.2726	0.6120	92.1300	0.0040	0.0007	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Xylenes (mixed isomers)						0.1165	0.0728	0.1813	106.1700	0.0238	0.0012	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)

Los Mestenios - T2 - Condensate (ACT) - Vertical Fixed Roof Tank
Gavilan, New Mexico

Annual Emission Calcaulations	
Standing Losses (lb):	2,816.7067
Vapor Space Volume (cu ft):	1,489.3739
Vapor Density (lb/cu ft):	0.0425
Vapor Space Expansion Factor:	0.3035
Vented Vapor Saturation Factor:	0.4016
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	1,489.3739
Tank Diameter (ft):	15.5000
Vapor Space Outage (ft):	7.8932
Tank Shell Height (ft):	12.8300
Average Liquid Height (ft):	6.0000
Roof Outage (ft):	1.0632
Roof Outage (Dome Roof)	
Roof Outage (ft):	1.0632
Dome Radius (ft):	15.5000
Shell Radius (ft):	7.7500
Vapor Density	
Vapor Density (lb/cu ft):	0.0425
Vapor Molecular Weight (lb/lb-mole):	67.5024
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	3.5613
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:	0.3035
Daily Vapor Temperature Range (deg. R):	53.7176
Daily Vapor Pressure Range (psia):	1.7915
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	3.5613
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	2.6970
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	4.4885
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:	0.4016
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):	3.5613
Vapor Space Outage (ft):	7.8932
Working Losses (lb):	440.8663

Vapor Molecular Weight (lb/lb-mole):	67.5024
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	3.5613
Annual Net Throughput (gal/yr.):	77,024.0000
Annual Turnovers:	4.5800
Turnover Factor:	1.0000
Maximum Liquid Volume (gal):	16,800.0000
Maximum Liquid Height (ft):	11.8300
Tank Diameter (ft):	15.5000
Working Loss Product Factor:	1.0000
Total Losses (lb):	3,257.5730

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

Emissions Report for: Annual

Los Mestenios - T2 - Condensate (ACT) - Vertical Fixed Roof Tank
Gavilan, New Mexico

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Condensate	440.87	2,816.71	3,257.57
Iso-Butane	72.99	466.31	539.29
Butane (-n)	138.29	883.52	1,021.81
Hexane (-n)	38.08	243.29	281.37
Cyclohexane	9.77	62.43	72.20
Heptane (-n)	31.98	204.31	236.29
Benzene	2.45	15.63	18.08
Toluene	0.32	2.05	2.37
Ethylbenzene	0.13	0.86	0.99
Xylenes (mixed isomers)	0.54	3.42	3.95
Octane (-n)	4.59	29.32	33.91
Nonane (-n)	1.82	11.62	13.43
Decane (-n)	1.96	12.54	14.50
2,2,4-Trimethylpentane (isooctane)	0.48	3.06	3.54
Isopentane	85.39	545.56	630.94
Pentane (-n)	51.78	330.82	382.60
Cyclopentane	0.31	1.99	2.30

Section 5.6

Condensate Truck Loading (Unit L1)

Written Description

Condensate Truck Loading (L1)

Emissions from condensate truck loading were calculated using the emission factor equation from AP-42, Section 5.2, *Transportation and Marketing of Petroleum Liquids*. The TANKS 4.0.9d predicted pressure, molecular weight, and temperature (from the condensate working/breathing losses output file) were used to calculate the emission factor. The inputs and calculated emission factor are identified on the Condensate Truck Loading Emissions Calculations spreadsheets.

With the change in condensate composition (switching from the 2021 analysis to the 2018 analysis), TANKS adjusted the predicted pressure and molecular weight. These changes increased the emission factor used to calculate the truck loading emissions. As a result, condensate truck loading is now a significant source.

PTE emissions were calculated using an annual condensate throughput rate of 22,141 bbl//yr.

Actual emissions were calculated using the 2021 condensate throughput rate of 3,667.8 bbl/yr.

Section 5.6

Condensate Truck Loading (Unit L1)

PTE Emission Calculations

Condensate Truck Loading PTE Emissions Calculations

Unit Number: L1
Description: Truck Loading

Emission Factor

0.6		Saturation factor, S	AP-42, Table 5.2-1 (submerged loading & dedicated service)
5.6924	psia	True vapor pressure of liquid, P	TANKS 4.0 output file
66.3202	lb/lb-mole	Molecular weight of vapors, M	TANKS 4.0 output file
67.36	°F	Temperature of liquid	TANKS 4.0 output file
527.0	°R	Temperature of liquid, T	°F + 459.67
5.36	lb/10^3 gal	Emission factor, L	AP-42, Section 5.2, Equation 1 L =12.46 (SPM/T)

Production Rate

929.92	10^3 gal/yr	Maximum annual production rate	Harvest Four Corners, LLC

(= 22,141 bbl/yr, which is approx. max historical throughput plus 10%)

Steady-State Emission Rates

Pollutant	Emission Rates, tpy
VOC	2.49

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

Pollutants	Percent of VOC, %	Emission Rates, tpy
Benzene	0.36	9.05E-03
Ethylbenzene	0.01	1.32E-04
n-Hexane	13.64	3.40E-01
Isooctane	0.00	0.00E+00
Toluene	0.26	6.54E-03
m-Xylene	0.03	7.50E-04

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

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:

$$L_L = 12.46 \frac{SPM}{T} \tag{1}$$

where:

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

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

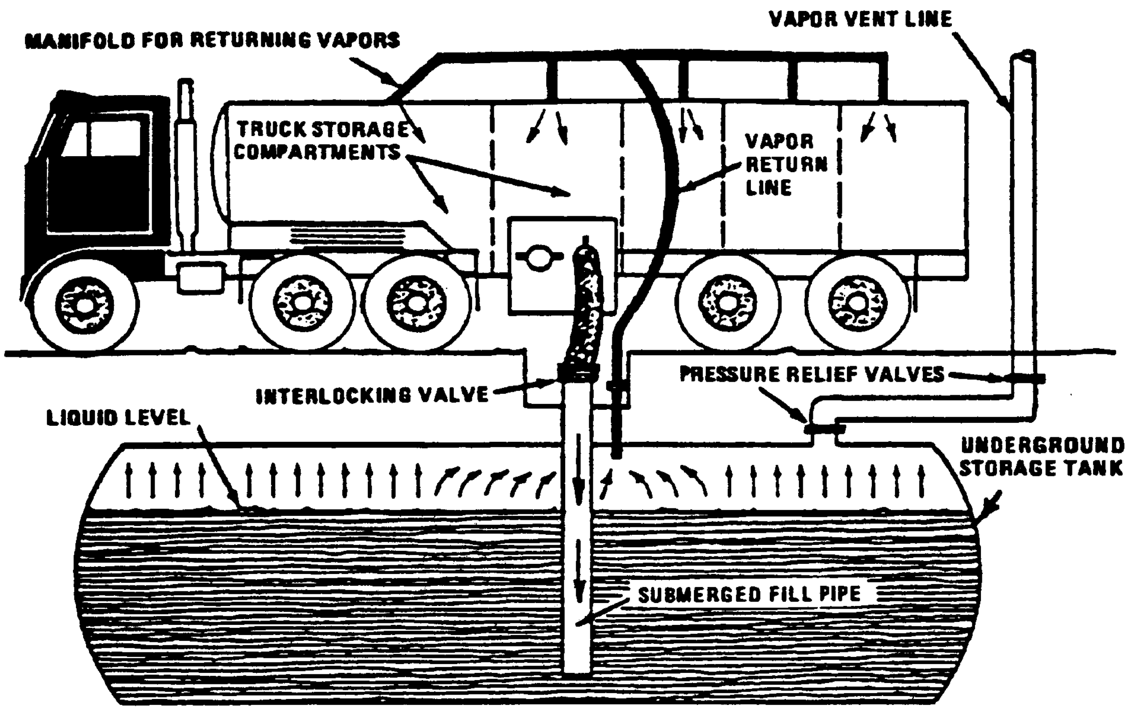


Figure 5.2-5. Tank truck unloading into a service station underground storage tank and practicing "vapor balance" form of emission control.

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

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

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

The saturation factor, S, represents the expelled vapor's fractional approach to saturation, and it accounts for the variations observed in emission rates from the different unloading and loading methods. Table 5.2-1 lists suggested saturation factors.

Emissions from controlled loading operations can be calculated by multiplying the uncontrolled emission rate calculated in Equation 1 by an overall reduction efficiency term:

$$\left(1 - \frac{\text{eff}}{100}\right)$$

The overall reduction efficiency should account for the capture efficiency of the collection system as well as both the control efficiency and any downtime of the control device. Measures to reduce loading emissions include selection of alternate loading methods and application of vapor recovery equipment. The latter captures organic vapors displaced during loading operations and recovers the vapors by the use of refrigeration, absorption, adsorption, and/or compression. The recovered product is piped back to storage. Vapors can also be controlled through combustion in a thermal oxidation unit, with no product recovery. Figure 5.2-6 demonstrates the recovery of gasoline vapors from tank trucks during loading operations at bulk terminals. Control efficiencies for the recovery units range from 90 to over 99 percent, depending on both the nature of the vapors and the type of control equipment used.[5-6] However, not all of the displaced vapors reach the control device, because of leakage from both the tank truck and collection system. The collection efficiency should be assumed to be 99.2 percent for tanker trucks passing the MACT-level annual leak test (not more than 1 inch water column pressure change in 5 minutes after pressurizing to 18 inches water followed by pulling a vacuum of 6 inches water).[7] A collection efficiency of 98.7 percent (a 1.3 percent leakage rate) should be assumed for trucks passing the NSPS-level annual test (3 inches pressure change) A collection efficiency of 70 percent should be assumed for trucks not passing one of these annual leak tests[6].

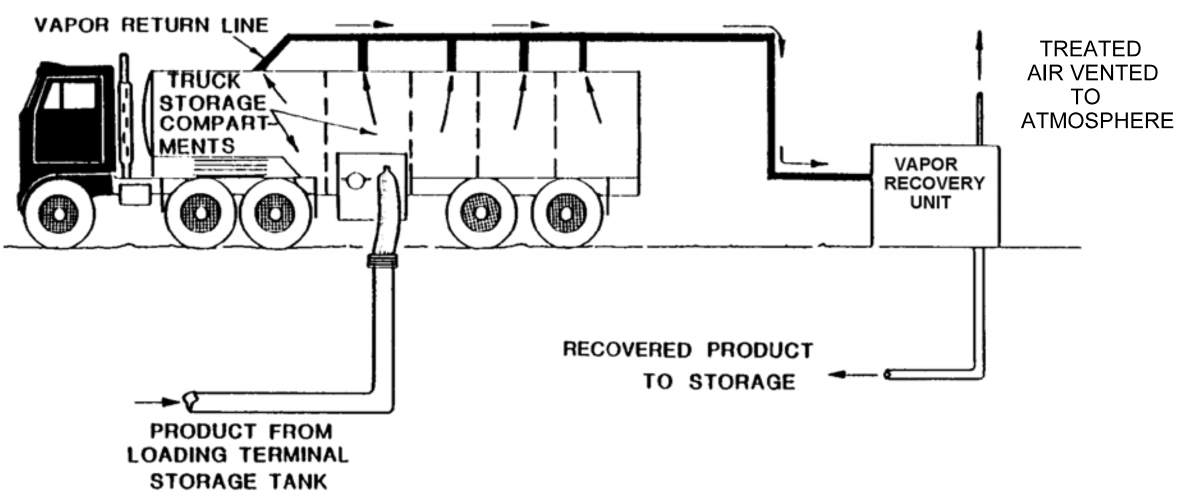


Figure 5.2-6. Tank truck loading with vapor recovery.

Section 5.6

Condensate Truck Loading (Unit L1)

Actual Emission Calculations

Condensate Truck Loading Actual Emissions Calculations

Unit Number: L1
Description: Truck Loading

Emission Factor

0.6		Saturation factor, S	AP-42, Table 5.2-1 (submerged loading & dedicated service)
3.5613	psia	True vapor pressure of liquid, P	TANKS 4.0 output file
67.5024	lb/lb-mole	Molecular weight of vapors, M	TANKS 4.0 output file
67.36	°F	Temperature of liquid	TANKS 4.0 output file
527.0	°R	Temperature of liquid, T	°F + 459.67
3.41	lb/10^3 gal	Emission factor, L	AP-42, Section 5.2, Equation 1 L =12.46 (SPM/T)

Production Rate

154.05	10^3 gal/yr	Maximum annual production rate (= 3,667.8 bbl/yr)	Harvest Four Corners, LLC

Steady-State Emission Rates

Pollutant	Emission Rates, tpy
VOC	2.63E-01

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

Pollutants	Percent of VOC, %	Emission Rates, tpy
Benzene	0.55	1.46E-03
Ethylbenzene	0.03	7.96E-05
n-Hexane	8.64	2.27E-02
Isooctane	0.11	2.85E-04
Toluene	0.07	1.91E-04
m-Xylene	0.12	3.19E-04

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

Section 5.7

Heaters (Units 4 & 5)

Written Description

Heaters (Units 4 & 5)

Emissions from the heaters were calculated using AP-42 emission factors from Tables 1.4-1 & 1.4-2. PTE and emissions were calculated assuming the heaters operate at full capacity for 8,760 hours per year.

In this application, there are no changes to the calculations as they were presented in Revision 1 of the application.

The calculations demonstrate the heaters are insignificant sources. Therefore, actual emissions were not calculated.

Section 5.7

Heaters (Units 4 & 5)

PTE Emission Calculations

Heater Exhaust PTE Emissions Calculations

Unit Number: 4
Description: Fuel Gas Heater

Fuel Consumption

0.30	MMBtu/hr	Capacity	Mfg. data
333	scf/hr	Hourly fuel consumption	MMBtu/hr x 1,000,000 / Btu/scf
8,760	hr/yr	Annual operating time	Harvest Four Corners, LLC
2,628	MMBtu/yr	Annual fuel consumption	MMBtu/hr x hr/yr
2.92	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, lb/MMscf	Uncontrolled Emission Rates, pph	Uncontrolled Emission Rates, tpy
NOX	100	3.33E-02	1.46E-01
CO	84	2.80E-02	1.23E-01
VOC	5.5	1.83E-03	8.03E-03
SO2	0.6	2.00E-04	8.76E-04
TSP	7.60	2.53E-03	1.11E-02
PM10	7.60	2.53E-03	1.11E-02
PM2.5	7.60	2.53E-03	1.11E-02

Emission factors taken from AP-42, Tables 1.4-1 & 1.4-2
Uncontrolled Emission Rates (pph) = lb/MMscf x MMscf/hr
Uncontrolled Emission Rates (tpy) = Uncontrolled Emission Rates (pph) x hr/yr / 2,000 lb/ton

Heater Exhaust PTE Emissions Calculations

Unit Number: 5
Description: Tank Heater

Fuel Consumption

0.012	MMBtu/hr	Capacity	Mfg. data
13	scf/hr	Hourly fuel consumption	MMBtu/hr x 1,000,000 / Btu/scf
8,760	hr/yr	Annual operating time	Harvest Four Corners, LLC
105	MMBtu/yr	Annual fuel consumption	MMBtu/hr x hr/yr
0.12	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, lb/MMscf	Uncontrolled Emission Rates, pph	Uncontrolled Emission Rates, tpy
NOX	100	1.33E-03	5.84E-03
CO	84	1.12E-03	4.91E-03
VOC	5.5	7.33E-05	3.21E-04
SO2	0.6	8.00E-06	3.50E-05
TSP	7.60	1.01E-04	4.44E-04
PM10	7.60	1.01E-04	4.44E-04
PM2.5	7.60	1.01E-04	4.44E-04

Emission factors taken from AP-42, Tables 1.4-1 & 1.4-2
Uncontrolled Emission Rates (pph) = lb/MMscf x MMscf/hr
Uncontrolled Emission Rates (tpy) = Uncontrolled Emission Rates (pph) x hr/yr / 2,000 lb/ton

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

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

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

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

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

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

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

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

[b] Based on approximately 100% conversion of fuel carbon to CO_2. $CO_2[lb/10^6 \text{ scf}] = (3.67)$ (CON)(C)(D), where CON = fractional conversion of fuel carbon to CO_2, C = carbon content of fuel by weight (0.76), and D = density of fuel, $4.2x10^4$ $lb/10^6$ scf.

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

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

Section 5.8

Pig Launcher & Receiver (Units PL & PR)

Written Description

Pig Launcher & Receiver (PL & PR)

Harvest recently updated their estimate of the pig receiver blowdown volume. The volume released was calculated from the receiver dimensions and pipeline pressure. The new calculations are included on the pig launcher and receiver emissions calculations spreadsheets.

Emissions from pig receiving occur when the receiver is opened to remove the pigging devices. The emissions were calculated from the number of events, the volume of gas released per event, and composition of the gas. The quantity of gas vented during each event was calculated by Harvest (see paragraph above). The composition of the gas was based on a recent gas analysis from the facility. It was conservatively estimated by operations that pig launching will occur once per month and pig receiving will occur 116 times per year (twice per week plus once per month as a safety factor).

Four extended gas analyses (collected during the last five years, 2017 - 2021) were available for use in the application: April 2017, April 2018, October 2019, and May 2021. Harvest calculated pig launcher and receiver emissions using the analysis that predicted the highest VOC emission rates, the May 2021 analysis.

In this application, there are no changes to the calculations as they were presented in Revision 1 of the application.

Calculations demonstrate that both the pig launcher and the pig receiver are insignificant sources. Therefore, actual emissions were not calculated.

Response to EPA request for additional information:

- Clarify in the new application if the condensate sample analysis is being used to calculate flash emission using VMGSYm for the pigging activities. If not, explain why? The worst-case sample analysis results during the 5-year term of the permit should be used here as well.

A condensate analysis was not used to calculate pigging emissions. As stated above, emissions were calculated using a recent extended gas analysis, the analysis from the last five years that produced the highest VOC emission rate. A gas sample from the facility is the best available representation of the composition. Note that liquids from the pigging operations are sent to the condensate tanks and any flash emissions from that liquid are accounted for in the condensate tank flash emissions calculations.

Response to EPA request for additional information:

- Provide recordkeeping to confirm the pigging activities number of events per week.

Though Harvest is not required to keep records of pigging activities, a listing of the 2021 events is included in Section 8.

Response to EPA request for additional information:

- The pigging activity emission calculations including an example calculation that aligns with an actual description of the activity as conducted at the Facility.

In Revision 1 of the application, Harvest provided detailed calculations for the pigging activities. This application contains those same calculations.

Response to EPA request for additional information:

- An explanation of how VOC emissions are calculated using the well gas analysis for all the emission units that this analysis is used for and a calculation that demonstrates this description.

The gas passing through the facility is a blend of gas from wells throughout the area. See the written description above and the calculation spreadsheets.

Section 5.8

Pig Launcher & Receiver (Units PL & PR)

PTE Emission Calculations

Pig Launcher PTE Emissions Calculations

Unit Number: PL
Description: Pig Launcher

Blowdown Volume

Outside Diameter, in	Wall Thickness, in	Tube Length, ft	Port Size, in	Pressure, psig	Purge Duration, min	Gas Loss, mscf
16	0.375	7	1	210	1	3.627

Blowdown Gas Loss
((([Outside diameter (in)] - 2 * [Wall thickness (in)]) ^ 2) * [Pressure (psig)] * [Pipeline length (ft)] * 0.372 / 1000000
Purge Gas Loss
([Port size (in)] ^ 2) * [Pressure (psig)] * ([Purge duration (min)] / 60)

Throughput

12	events/yr	Blowdowns per year	Harvest Four Corners, LLC
3,627	scf/event	Gas loss per blowdown	Harvest Four Corners, LLC
43,526	scf/yr	Annual gas loss	events/yr x scf/event

Emission Rates

Pollutants	Emission Factors, lb/scf	Uncontrolled, Emission Rates, tpy
VOC	1.307E-02	2.84E-01
Benzene	2.532E-05	5.51E-04
Ethylbenzene	5.597E-07	1.22E-05
n-Hexane	2.950E-04	6.42E-03
Isooctane	7.396E-06	1.61E-04
Toluene	4.007E-05	8.72E-04
Xylene	6.716E-06	1.46E-04

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

Gas Composition

Components	Mole Percents, %	Molecular Weights, lb/lb-mole	Emission Factors, lb/scf
Carbon dioxide	0.8632	44.01	1.001E-03
Hydrogen sulfide	0.0000	34.07	0.000E+00
Nitrogen	0.4462	28.01	3.294E-04
Methane	78.7294	16.04	3.328E-02
Ethane	10.7901	30.07	8.552E-03
Propane	5.0734	44.09	5.896E-03
Isobutane	0.8940	58.12	1.370E-03
n-Butane	1.5609	58.12	2.391E-03
Isopentane	0.5577	72.15	1.061E-03
n-Pentane	0.4298	72.15	8.173E-04
Cyclopentane	0.0189	70.14	3.494E-05
n-Hexane	0.1299	86.17	2.950E-04
Cyclohexane	0.0389	84.16	8.629E-05
Other hexanes	0.2872	86.18	6.524E-04
Heptanes	0.0720	100.20	1.902E-04
Methylcyclohexane	0.0556	98.19	1.439E-04
Isooctane	0.0028	100.21	7.396E-06
Benzene	0.0123	78.11	2.532E-05
Toluene	0.0165	92.14	4.007E-05
Ethylbenzene	0.0002	106.17	5.597E-07
Xylenes	0.0024	106.17	6.716E-06
C8+ Heavies	0.0187	110.00	5.422E-05
Total	100.0001		
Total VOC			1.307E-02

Gas stream composition obtained from Los Mestenios extended gas analysis dated 05/06/2021
Emission Factors (lb/scf) = (% / 100) x lb/lb-mole / 379.4 scf/lb-mole

Pig Receiver PTE Emissions Calculations

Unit Number: PR
Description: Pig Receiver

Blowdown Volume

Outside Diameter, in	Wall Thickness, in	Tube Length, ft	Port Size, in	Pressure, psig	Purge Duration, min	Gas Loss, mcf
12	0.375	8	1	95	1	1.619

Blowdown Gas Loss
((\[Outside diameter (in)] - 2 * [Wall thickness (in)]) ^ 2) * [Pressure (psig)] * [Pipeline length (ft)] * 0.372 / 1000000
Purge Gas Loss
([Port size (in)] ^ 2) * [Pressure (psig)] * ([Purge duration (min)] / 60)

Throughput

116	events/yr	Blowdowns per year	Harvest Four Corners, LLC
1,619	scf/event	Gas loss per blowdown	Harvest Four Corners, LLC
187,817	scf/yr	Annual gas loss	events/yr x scf/event

Emission Rates

Pollutants	Emission Factors, lb/scf	Uncontrolled, Emission Rates, tpy
VOC	1.307E-02	1.23
Benzene	2.532E-05	2.38E-03
Ethylbenzene	5.597E-07	5.26E-05
n-Hexane	2.950E-04	2.77E-02
Isooctane	7.396E-06	6.95E-04
Toluene	4.007E-05	3.76E-03
Xylene	6.716E-06	6.31E-04

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

Gas Composition

Components	Mole Percents, %	Molecular Weights, lb/lb-mole	Emission Factors, lb/scf
Carbon dioxide	0.8632	44.01	1.001E-03
Hydrogen sulfide	0.0000	34.07	0.000E+00
Nitrogen	0.4462	28.01	3.294E-04
Methane	78.7294	16.04	3.328E-02
Ethane	10.7901	30.07	8.552E-03
Propane	5.0734	44.09	5.896E-03
Isobutane	0.8940	58.12	1.370E-03
n-Butane	1.5609	58.12	2.391E-03
Isopentane	0.5577	72.15	1.061E-03
n-Pentane	0.4298	72.15	8.173E-04
Cyclopentane	0.0189	70.14	3.494E-05
n-Hexane	0.1299	86.17	2.950E-04
Cyclohexane	0.0389	84.16	8.629E-05
Other hexanes	0.2872	86.18	6.524E-04
Heptanes	0.0720	100.20	1.902E-04
Methylcyclohexane	0.0556	98.19	1.439E-04
Isooctane	0.0028	100.21	7.396E-06
Benzene	0.0123	78.11	2.532E-05
Toluene	0.0165	92.14	4.007E-05
Ethylbenzene	0.0002	106.17	5.597E-07
Xylenes	0.0024	106.17	6.716E-06
C8+ Heavies	0.0187	110.00	5.422E-05
Total	100.0001		
Total VOC			1.307E-02

Gas stream composition obtained from Los Mestenios extended gas analysis dated 05/06/2021
Emission Factors (lb/scf) = (% / 100) x lb/lb-mole / 379.4 scf/lb-mole

Section 5.9

Produced Water Storage Tank (Unit T3)

Written Description

Produced Water Storage Tank (Unit T3)

Emissions from the produced water storage tanks were calculated using a throughput of 840 bbl/yr and emission factors from the Colorado Department of Public Health and Environment (CDPHE) and the Texas Commission on Environmental Quality (TCEQ).

In this application, there are no changes to the calculations as they were presented in both previous applications.

Calculations demonstrate that the produced water storage tanks are insignificant sources. Therefore, actual emissions were not calculated.

Response to EPA request for additional information:

- <u>Explain the use of emission factors from Colorado</u>, meteorological data from Colorado, etc. instead of New Mexico.

New Mexico has not yet developed emission factors for produced water. The AP-42 Chapter 7 equations/algorithms are not applicable to tanks without roofs. Even if a tank has some sort of roof, the composition of the water is not typically known. The only known emissions factors from states around New Mexico come from the CDPHE and TCEQ.

Response to EPA request for additional information:

- Provide explanation for using 2010 TCEQ guidance for produced water emission factor and not more recent information. Also, use NMED guidance instead of, i.e., information specific to area where facility is located.

New Mexico has not yet developed emission factors for produced water. The only known emissions factors from states around New Mexico come from the CDPHE and TCEQ. We have found nothing more recent.

Section 5.9

Produced Water Storage Tank (Unit T3)

PTE Emission Calculations

Produced Water Storage Tank PTE Emissions Calculations

Unit Number: T3
Description: Produced Water Tank

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

Throughput

70	bbl/turnover	Tank capacity	Harvest Four Corners, LLC
12	turnover/yr	Turnovers per year	Harvest Four Corners, LLC
840	bbl/yr	Annual liquid throughput	bbl/turnover x turnover/yr

Emission Rates

Pollutant	Emission Factor, lb/bbl	Uncontrolled, Emission Rate, tpy
VOC	0.262	1.10E-01
Benzene	0.007	2.94E-03
Ethylbenzene	0.0007	2.94E-04
n-Hexane	0.022	9.24E-03
Toluene	0.009	3.78E-03
Xylene	0.006	2.52E-03

VOC, Benzene, and n-Hexane emission factors are taken 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 taken from the TCEQ
Project 2010-29 (Emission Factor Determination for Produced Water Storage Tanks) report
Uncontrolled Emission Rates (tpy) = lb/bbl x bbl/yr / 2,000 lb/ton

PS Memo 09-02

To:	**Stationary Sources Program, Local Agencies, and Regulated Community**
From:	**Chris Laplante and Roland C. Hea, Colorado Air Pollution Control Division**
Date:	**February 8, 2010**
Subject:	**Oil & Gas Produced Water Tank Batteries**
	Regulatory Definitions and Permitting Guidance

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

Revision History

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

Topic — Page

3. EMISSION FACTORS AND SITE SPECIFIC SAMPLING Q&A

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Emission Factor Determination for Produced Water Storage Tanks

TCEQ Project 2010-29

Prepared for:
Texas Commission on Environmental Quality
Austin, Texas

Prepared by:
ENVIRON International Corporation
Novato, California

Date:
August 2010

ENVIRON Project Number:
06-17477T

Executive Summary

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

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

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

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

Table ES-1. Recommended Emission Factors and Comparative Data

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

Section 5.10

Produced Water Truck Loading (Unit L2)

Written Description

Produced Water Truck Loading (L-2)

Emissions from produced water truck loading were calculated using the annual produced water throughput and the emission factor equation from AP-42, Section 5.2, *Transportation and Marketing of Petroleum Liquids*. The emission factor was calculated using Antoine's equation to calculate the true vapor pressure, the molecular weight of water, and an estimated average temperature of the liquid. Please see the calculations on the Produced Water Truck Loading Emissions Calculations spreadsheet.

PTE emissions were calculated assuming a throughput of 840 bbl/yr

In this application, there are no changes to the calculations as they were presented in both previous applications.

Calculations demonstrate that produced water truck loading is an insignificant source. Therefore, actual emissions were not calculated.

Section 5.10

Produced Water Truck Loading (Unit L2)

PTE Emission Calculations

Produced Water Truck Loading PTE Emissions Calculations

Unit Number: L2
Description: Truck Loading

Emission Factor

0.6		Saturation factor, S	AP-42, Table 5.2-1 (submerged loading & dedicated service)
0.3045	psia (average)	True vapor pressure of liquid, P	Estimated using Antoine's Equation (see calculations below)
18.02	lb/lb-mole	Molecular weight of vapors, M	TANKS 4.0 Database
65	°F (average)	Temperature of liquid	Estimated (see calculations below)
524.67	°R (average)	Temperature of liquid, T	°F + 459.67
0.08	lb/10^3 gal (average)	Emission factor, L	AP-42, Section 5.2, $L = 12.46 \frac{SPM}{T}$

Production Rate

35.28	10^3 gal/yr	Maximum annual production rate	Harvest Four Corners, LLC

Steady-State Emission Rates

Pollutant	Emission Rates, tpy
VOC	1.38E-03

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

Pollutants	Mass Fraction	Emission Rates, tpy
Benzene	0.0267	3.69E-07
Ethylbenzene	0.0027	3.69E-08
n-Hexane	0.0840	1.16E-06
Toluene	0.0344	4.74E-07
m-Xylene	0.0229	3.16E-07

HAP mass fractions are estimated from the produced water tank emission factors
HAP Mass Fraction = HAP Emission Factor (lb/bbl) / VOC Emission Factor (lb/bbl)
Emission Rates (tpy) = VOC Emission Rate (tpy) x HAP Mass Fraction

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:			**Average:**		
Temperature =	77	°F	Temperature =	65	°F
log P = A - (B / (C + T))			log P = A - (B / (C + T))		
A = 8.07131			A = 8.07131		
B = 1730.63			B = 1730.63		
C = 233.426			C = 233.426		
T =	25.00	°C	T =	18.33	°C
P = mmHg			P = mmHg		
P = 10^(A - (B / (C + T))			P = 10^(A - (B / (C + T))		
P =	23.69	mmHg	P =	15.75	mmHg
P =	0.4581	psi	P =	0.3045	psi

Note: 760 mmHg = 14.7 psia

Section 5.11

Miscellaneous Storage Tanks (Units T4 – T7)

Written Description

Miscellaneous Storage Tank (Unit T4 – T7)

Residual oil #6 was used as an estimate for lubrication oil. As the vapor pressure of residual oil #6 is less than 0.2 psia, the tanks containing lubrication and used oil were assumed to be Title V insignificant sources. No calculations are provided.

Ambitrol is an inhibited ethylene or propylene glycol coolant (antifreeze) containing ethylene or propylene glycol, water, and less than 5% dipotassium hydrogen phosphate. Since the vapor pressures of ethylene glycol and propylene glycol are less than 0.2 psia, the tank containing Ambitrol was assumed to be a Title V insignificant source. No calculations are provided.

VOC emissions from the methanol storage tank were calculated using TANKS 4.0.9d. As emissions were only 44.79 pounds per year, the tank is a Title V insignificant source. A copy of the TANKS output file is provided.

In this application, there are no changes to the calculations as they were presented in both previous applications.

Section 5.11

Miscellaneous Storage Tanks (Units T4 – T7)

PTE Emission Calculations

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

Identification

User Identification:	Los Mestenios - T7 - Methanol
City:	Gavilan
State:	New Mexico
Company:	Harvest Four Corners, LLC
Type of Tank:	Horizontal Tank
Description:	500 Gallon Methanol Storage Tank

Tank Dimensions

Shell Length (ft):	6.00
Diameter (ft):	4.00
Volume (gallons):	500.00
Turnovers:	12.00
Net Throughput(gal/yr):	6,000.00
Is Tank Heated (y/n):	N
Is Tank Underground (y/n):	N

Paint Characteristics

Shell Color/Shade:	Gray/Medium
Shell Condition	Good

Breather Vent Settings

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

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

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

Los Mestenios - T7 - Methanol - Horizontal Tank
Gavilan, New Mexico

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Methyl alcohol	All	67.36	53.93	80.79	59.23	1.8115	1.1881	2.6951	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)

Los Mestenios - T7 - Methanol - Horizontal Tank
Gavilan, New Mexico

Annual Emission Calcaulations	
Standing Losses (lb):	36.5024
Vapor Space Volume (cu ft):	48.0243
Vapor Density (lb/cu ft):	0.0103
Vapor Space Expansion Factor:	0.2419
Vented Vapor Saturation Factor:	0.8389
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	48.0243
Tank Diameter (ft):	4.0000
Effective Diameter (ft):	5.5293
Vapor Space Outage (ft):	2.0000
Tank Shell Length (ft):	6.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0103
Vapor Molecular Weight (lb/lb-mole):	32.0400
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	1.8115
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
Daily Total Solar Insulation Factor (Btu/sqft day):	1,765.3167
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.2419
Daily Vapor Temperature Range (deg. R):	53.7176
Daily Vapor Pressure Range (psia):	1.5070
Breather Vent Press. Setting Range(psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	1.8115
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	1.1881
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	2.6951
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:	0.8389
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):	1.8115
Vapor Space Outage (ft):	2.0000
Working Losses (lb):	8.2917
Vapor Molecular Weight (lb/lb-mole):	32.0400
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	1.8115
Annual Net Throughput (gal/yr.):	6,000.0000
Annual Turnovers:	12.0000
Turnover Factor:	1.0000

Tank Diameter (ft):	4.0000
Working Loss Product Factor:	1.0000

Total Losses (lb):	44.7941

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

Emissions Report for: Annual

Los Mestenios - T7 - Methanol - Horizontal Tank
Gavilan, New Mexico

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Methyl alcohol	8.29	36.50	44.79

Section 5.12

GHG Emissions

Written Description

GHG Emissions

CO_2, CH_4, and N_2O exhaust emissions were calculated using emission factors from 40 Code of Federal Regulations (CFR), Part C, Tables C-1 & C-2 and the combustion source higher heating value (HHV) design heat rates.

The SSM CO_2 and CH_4 emissions were calculated from the annual blowdown volumes and gas composition.

CO_2 and CH_4 equipment leaks emissions were calculated using Subpart W emission factors and gas stream composition.

Four extended gas analyses (collected during the last five years, 2017 - 2021) were available for use in the application: April 2017, April 2018, October 2019, and May 2021. Harvest calculated SSM, Pigging and equipment leak emissions using the analysis that predicted the highest VOC emission rates, the May 2021 analysis.

Condensate tank CO_2 and CH_4 emissions were calculated from throughput and composition data in the VMGSim output file.

Section 5.12

GHG Emissions

PTE Emission Calculations

Green House Gas Emissions Data and Calculations

Sources	Facility Total Emissions				
	CO2, tpy	CH4, tpy	N2O, tpy	GHG, tpy	CO2e, tpy
Engine & Turbine Exhaust	5,575.80	1.06E-01	1.07E-02	5,575.92	5581.63
SSM Blowdowns	9.10E-01	30.26	--	31.17	757.30
Equipment Leaks	1.69E-01	5.61	--	5.78	140.45
Storage Tanks (Flash Emissions)	7.34E-01	10.69	--	11.43	268.06
Total	5,577.61	46.67	1.07E-02	5,624.29	6,747.45

Engine & Turbine Exhaust Emissions

Unit Numbers	Description	Emission Factors			Emission Rates		
		CO2, kg/MMBtu	CH4, kg/MMBtu	N2O, kg/MMBtu	CO2, tpy	CH4, tpy	N2O, tpy
1	Solar Saturn T1200	53.06	1.00E-03	1.00E-04	5,544.61	1.04E-01	1.04E-02
3	Scania DS11	73.96	3.00E-03	6.00E-04	31.19	1.27E-03	2.53E-04
	Total				5,575.80	1.06E-01	1.07E-02

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	HHV Fuel Usages, MMBtu/yr
1	Solar Saturn T1200	Nat. Gas	8,760	9.76	10.84	94,997
3	Scania DS11	Diesel	500	0.69	0.77	383

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

SSM Blowdown Emissions

Unit Numbers	Description	Total Gas Losses, scf/yr	CO2 Emission Factors, lb/scf	CH4 Emission Factors, lb/scf	Emission Rates	
					CO2, tpy	CH4, tpy
SSM	SSM Blowdowns	1,818,000	0.0010	0.0333	0.91	30.26

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

Equipment Leaks Emissions

Unit Numbers	Description	Emission Rates	
		CO2, tpy	CH4, tpy
NA	Valves	1.3E-01	4.45
NA	Connectors	1.4E-02	4.6E-01
NA	Open-Ended Lines	9.9E-03	3.3E-01
NA	Pressure Relief Valves	1.1E-02	3.7E-01
	Total	1.7E-01	5.61

A combination of equations W-31 & W-36 (Subpart W) is used to calculate uncombusted CO2 & CH4 emissions
Since the CO2e is not being calculated in this table, 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

Green House Gas Emissions Data and Calculations

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	252	0.121	0.86	78.73	8,760	0.0526	0.0192
NA	Connectors	187	0.017	0.86	78.73	8,760	0.0526	0.0192
NA	Open-Ended Lines	73	0.031	0.86	78.73	8,760	0.0526	0.0192
NA	Pressure Relief Valves	13	0.193	0.86	78.73	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)

Storage Tanks (Flash Emissions)

Unit Number	Description	Emission Rates	
		CO2, tpy	CH4, tpy
T1	Condensate Tank	7.34E-01	10.69
T2	Condensate Tank	--	--
	Total	7.34E-01	10.69

Emission rates calculated from VMGSym results

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	0.8632	44.01	0.38	1.7805	0.0010
Hydrogen Sulfide	0.0000	34.07	0.00	0.0000	0.0000
Nitrogen	0.4462	28.01	0.12	0.5857	0.0003
Methane	78.7294	16.04	12.63	59.1848	0.0333
Ethane	10.7901	30.07	3.24	15.2064	0.0086
Propane	5.0734	44.09	2.24	10.4835	0.0059
IsoButane	0.8940	58.12	0.52	2.4352	0.0014
Normal Butane	1.5609	58.12	0.91	4.2518	0.0024
IsoPentane	0.5577	72.15	0.40	1.8858	0.0011
Normal Pentane	0.4298	72.15	0.31	1.4534	0.0008
Cyclopentane	0.0189	70.14	0.01	0.0621	0.0000
n-Hexane	0.1299	86.17	0.11	0.5246	0.0003
Cyclohexane	0.0389	84.16	0.03	0.1534	0.0001
Other Hexanes	0.2872	86.18	0.25	1.1600	0.0007
Heptanes	0.0720	100.20	0.07	0.3381	0.0002
Methylcyclohexane	0.0556	98.19	0.05	0.2559	0.0001
2,2,4-Trimethylpentane	0.0028	100.21	0.00	0.0132	0.0000
Benzene	0.0123	78.11	0.01	0.0450	0.0000
Toluene	0.0165	92.14	0.02	0.0713	0.0000
Ethylbenzene	0.0002	106.17	0.00	0.0010	0.0000
Xylenes	0.0024	106.17	0.00	0.0119	0.0000
C8+ heavies	0.0187	110.00	0.02	0.0964	0.0001
Total	100.0001		21.34	100.0000	0.0562
VOC			4.96	--	0.0131

Gas stream composition obtained from Los Mestenios extended gas analysis dated 05/06/2021
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

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

GLOBAL WARMING POTENTIALS

[100-Year Time Horizon]

Name	CAS No.	Chemical formula	Global warming potential (100 yr.)
Carbon dioxide	124-38-9	CO_2	1
Methane	74-82-8	CH_4	[a]25
Nitrous oxide	10024-97-2	N_2O	[a]298
HFC-23	75-46-7	CHF_3	[a]14,800
HFC-32	75-10-5	CH_2F_2	[a]675
HFC-41	593-53-3	CH_3F	[a]92
HFC-125	354-33-6	C_2HF_5	[a]3,500
HFC-134	359-35-3	$C_2H_2F_4$	[a]1,100
HFC-134a	811-97-2	CH_2FCF_3	[a]1,430
HFC-143	430-66-0	$C_2H_3F_3$	[a]353
HFC-143a	420-46-2	$C_2H_3F_3$	[a]4,470
HFC-152	624-72-6	CH_2FCH_2F	53
HFC-152a	75-37-6	CH_3CHF_2	[a]124
HFC-161	353-36-6	CH_3CH_2F	12
HFC-227ea	431-89-0	C_3HF_7	[a]3,220
HFC-236cb	677-56-5	$CH_2FCF_2CF_3$	1,340
HFC-236ea	431-63-0	CHF_2CHFCF_3	1,370
HFC-236fa	690-39-1	$C_3H_2F_6$	[a]9,810
HFC-245ca	679-86-7	$C_3H_3F_5$	[a]693
HFC-245fa	460-73-1	$CHF_2CH_2CF_3$	1,030
HFC-365mfc	406-58-6	$CH_3CF_2CH_2CF_3$	794
HFC-43-10mee	138495-42-8	$CF_3CFHCFHCF_2CF_3$	[a]1,640
Sulfur hexafluoride	2551-62-4	SF_6	[a]22,800
Trifluoromethyl sulphur pentafluoride	373-80-8	SF_5CF_3	17,700
Nitrogen trifluoride	7783-54-2	NF_3	17,200
PFC-14 (Perfluoromethane)	75-73-0	CF_4	[a]7,390
PFC-116 (Perfluoroethane)	76-16-4	C_2F_6	[a]12,200
PFC-218 (Perfluoropropane)	76-19-7	C_3F_8	[a]8,830
Perfluorocyclopropane	931-91-9	$C\text{-}C_3F_6$	17,340
PFC-3-1-10 (Perfluorobutane)	355-25-9	C_4F_{10}	[a]8,860
PFC-318 (Perfluorocyclobutane)	115-25-3	$C\text{-}C_4F_8$	[a]10,300
PFC-4-1-12 (Perfluoropentane)	678-26-2	C_5F_{12}	[a]9,160
PFC-5-1-14 (Perfluorohexane, FC-72)	355-42-0	C_6F_{14}	[a]9,300
PFC-9-1-18	306-94-5	$C_{10}F_{18}$	7,500
HCFE-235da2 (Isoflurane)	26675-46-7	$CHF_2OCHClCF_3$	350
HFE-43-10pccc (H-Galden 1040x, HG-11)	E1730133	$CHF_2OCF_2OC_2F_4OCHF_2$	1,870

HFE-125	3822-68-2	CHF_2OCF_3	14,900
HFE-134 (HG-00)	1691-17-4	CHF_2OCHF_2	6,320
HFE-143a	421-14-7	CH_3OCF_3	756
HFE-227ea	2356-62-9	$CF_3CHFOCF_3$	1,540
HFE-236ca12 (HG-10)	78522-47-1	$CHF_2OCF_2OCHF_2$	2,800
HFE-236ea2 (Desflurane)	57041-67-5	$CHF_2OCHFCF_3$	989
HFE-236fa	20193-67-3	$CF_3CH_2OCF_3$	487
HFE-245cb2	22410-44-2	$CH_3OCF_2CF_3$	708
HFE-245fa1	84011-15-4	$CHF_2CH_2OCF_3$	286
HFE-245fa2	1885-48-9	$CHF_2OCH_2CF_3$	659
HFE-254cb2	425-88-7	$CH_3OCF_2CHF_2$	359
HFE-263fb2	460-43-5	$CF_3CH_2OCH_3$	11
HFE-329mcc2	134769-21-4	$CF_3CF_2OCF_2CHF_2$	919
HFE-338mcf2	156053-88-2	$CF_3CF_2OCH_2CF_3$	552
HFE-338pcc13 (HG-01)	188690-78-0	$CHF_2OCF_2CF_2OCHF_2$	1,500
HFE-347mcc3 (HFE-7000)	375-03-1	$CH_3OCF_2CF_2CF_3$	575
HFE-347mcf2	171182-95-9	$CF_3CF_2OCH_2CHF_2$	374
HFE-347pcf2	406-78-0	$CHF_2CF_2OCH_2CF_3$	580
HFE-356mec3	382-34-3	$CH_3OCF_2CHFCF_3$	101
HFE-356pcc3	160620-20-2	$CH_3OCF_2CF_2CHF_2$	110
HFE-356pcf2	50807-77-7	$CHF_2CH_2OCF_2CHF_2$	265
HFE-356pcf3	35042-99-0	$CHF_2OCH_2CF_2CHF_2$	502
HFE-365mcf3	378-16-5	$CF_3CF_2CH_2OCH_3$	11
HFE-374pc2	512-51-6	$CH_3CH_2OCF_2CHF_2$	557
HFE-449s1 (HFE-7100)	163702-07-6	$C_4F_9OCH_3$	297
Chemical blend	163702-08-7	$(CF_3)_2CFCF_2OCH_3$	
HFE-569sf2 (HFE-7200)	163702-05-4	$C_4F_9OC_2H_5$	59
Chemical blend	163702-06-5	$(CF_3)_2CFCF_2OC_2H_5$	
Sevoflurane (HFE-347mmz1)	28523-86-6	$CH_2FOCH(CF_3)_2$	345
HFE-356mm1	13171-18-1	$(CF_3)_2CHOCH_3$	27
HFE-338mmz1	26103-08-2	$CHF_2OCH(CF_3)_2$	380
(Octafluorotetramethy-lene) hydroxymethyl group	NA	$X-(CF_2)_4CH(OH)-X$	73
HFE-347mmy1	22052-84-2	$CH_3OCF(CF_3)_2$	343
Bis(trifluoromethyl)-methanol	920-66-1	$(CF_3)_2CHOH$	195
2,2,3,3,3-pentafluoropropanol	422-05-9	$CF_3CF_2CH_2OH$	42
PFPMIE (HT-70)	NA	$CF_3OCF(CF_3)CF_2OCF_2OCF_3$	10,300

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

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

DEFAULT CO_2 EMISSION FACTORS AND HIGH HEAT VALUES FOR VARIOUS TYPES OF FUEL

Fuel type	Default high heat value	Default CO_2 emission factor
Coal and coke	mmBtu/short ton	kg CO_2/mmBtu
Anthracite	25.09	103.69
Bituminous	24.93	93.28
Subbituminous	17.25	97.17
Lignite	14.21	97.72
Coal Coke	24.80	113.67
Mixed (Commercial sector)	21.39	94.27
Mixed (Industrial coking)	26.28	93.90
Mixed (Industrial sector)	22.35	94.67
Mixed (Electric Power sector)	19.73	95.52
Natural gas	mmBtu/scf	kg CO_2/mmBtu
(Weighted U.S. Average)	1.026×10^{-3}	53.06
Petroleum products	mmBtu/gallon	kg CO_2/mmBtu
Distillate Fuel Oil No. 1	0.139	73.25
Distillate Fuel Oil No. 2	0.138	73.96
Distillate Fuel Oil No. 4	0.146	75.04
Residual Fuel Oil No. 5	0.140	72.93
Residual Fuel Oil No. 6	0.150	75.10
Used Oil	0.138	74.00
Kerosene	0.135	75.20
Liquefied petroleum gases (LPG)[1]	0.092	61.71
Propane[1]	0.091	62.87
Propylene[2]	0.091	67.77
Ethane[1]	0.068	59.60
Ethanol	0.084	68.44
Ethylene[2]	0.058	65.96
Isobutane[1]	0.099	64.94
Isobutylene[1]	0.103	68.86
Butane[1]	0.103	64.77
Butylene[1]	0.105	68.72
Naphtha (<401 deg F)	0.125	68.02
Natural Gasoline	0.110	66.88
Other Oil (>401 deg F)	0.139	76.22
Pentanes Plus	0.110	70.02

Petrochemical Feedstocks	0.125	71.02
Petroleum Coke	0.143	102.41
Special Naphtha	0.125	72.34
Unfinished Oils	0.139	74.54
Heavy Gas Oils	0.148	74.92
Lubricants	0.144	74.27
Motor Gasoline	0.125	70.22
Aviation Gasoline	0.120	69.25
Kerosene-Type Jet Fuel	0.135	72.22
Asphalt and Road Oil	0.158	75.36
Crude Oil	0.138	74.54
Other fuels—solid	mmBtu/short ton	kg CO_2/mmBtu
Municipal Solid Waste	9.95[3]	90.7
Tires	28.00	85.97
Plastics	38.00	75.00
Petroleum Coke	30.00	102.41
Other fuels—gaseous	mmBtu/scf	kg CO_2/mmBtu
Blast Furnace Gas	0.092×10^{-3}	274.32
Coke Oven Gas	0.599×10^{-3}	46.85
Propane Gas	2.516×10^{-3}	61.46
Fuel Gas[4]	1.388×10^{-3}	59.00
Biomass fuels—solid	mmBtu/short ton	kg CO_2/mmBtu
Wood and Wood Residuals (dry basis)[5]	17.48	93.80
Agricultural Byproducts	8.25	118.17
Peat	8.00	111.84
Solid Byproducts	10.39	105.51
Biomass fuels—gaseous	mmBtu/scf	kg CO_2/mmBtu
Landfill Gas	0.485×10^{-3}	52.07
Other Biomass Gases	0.655×10^{-3}	52.07
Biomass Fuels—Liquid	mmBtu/gallon	kg CO_2/mmBtu
Ethanol	0.084	68.44
Biodiesel (100%)	0.128	73.84
Rendered Animal Fat	0.125	71.06
Vegetable Oil	0.120	81.55

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

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

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

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

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

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Table C-2 to Subpart C of Part 98—Default CH_4 and N_2O Emission Factors for Various Types of Fuel

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

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

Table W-1A of Subpart W of Part 98—Default Whole Gas Emission Factors for Onshore Petroleum and Natural Gas Production

Onshore petroleum and natural gas production	Emission factor (scf/hour/ component)
Eastern U.S.	
Population Emission Factors—All Components, Gas Service[1]	
Valve	0.027
Connector	0.003
Open-ended Line	0.061
Pressure Relief Valve	0.040
Low Continuous Bleed Pneumatic Device Vents[2]	1.39
High Continuous Bleed Pneumatic Device Vents[2]	37.3
Intermittent Bleed Pneumatic Device Vents[2]	13.5
Pneumatic Pumps[3]	13.3
Population Emission Factors—All Components, Light Crude Service[4]	
Valve	0.05
Flange	0.003
Connector	0.007
Open-ended Line	0.05
Pump	0.01
Other[5]	0.30
Population Emission Factors—All Components, Heavy Crude Service[6]	
Valve	0.0005
Flange	0.0009
Connector (other)	0.0003
Open-ended Line	0.006
Other[5]	0.003
Western U.S.	
Population Emission Factors—All Components, Gas Service[1]	
Valve	0.121
Connector	0.017
Open-ended Line	0.031
Pressure Relief Valve	0.193
Low Continuous Bleed Pneumatic Device Vents[2]	1.39
High Continuous Bleed Pneumatic Device Vents[2]	37.3
Intermittent Bleed Pneumatic Device Vents[2]	13.5
Pneumatic Pumps[3]	13.3
Population Emission Factors—All Components, Light Crude Service[4]	
Valve	0.05
Flange	0.003

Connector (other)	0.007
Open-ended Line	0.05
Pump	0.01
Other[5]	0.30
Population Emission Factors—All Components, Heavy Crude Service[6]	
Valve	0.0005
Flange	0.0009
Connector (other)	0.0003
Open-ended Line	0.006
Other[5]	0.003

[1]For multi-phase flow that includes gas, use the gas service emissions factors.

[2]Emission Factor is in units of "scf/hour/device."

[3]Emission Factor is in units of "scf/hour/pump."

[4]Hydrocarbon liquids greater than or equal to 20°API are considered "light crude."

[5]"Others" category includes instruments, loading arms, pressure relief valves, stuffing boxes, compressor seals, dump lever arms, and vents.

[6]Hydrocarbon liquids less than 20°API are considered "heavy crude."

Section 6

Federal Regulations Applicability

FEDERAL REGU-LATIONS CITATION	Title	Applies to Entire Facility	Applies to Unit No(s).	Does Not Apply	JUSTIFICATION:
40 CFR 50	NAAQS	✓			This regulation is applicable because it applies to all sources in the United States.
NSPS 40 CFR 60, Subpart A	General Provisions		1		This regulation is applicable because 40 CFR Part 60 Subpart GG is applicable.
NSPS 40 CFR 60, Subpart K	Standards of Performance for Storage Vessels for Petroleum Liquids for which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978			✓	This regulation is not applicable because the petroleum liquids storage tanks at the facility have capacities less than the minimum applicability threshold capacity of 40,000 gallons (see §60.110(a)).
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			✓	This regulation is not applicable because the storage tanks at the facility have capacities less than the minimum applicability threshold capacity of 40,000 gallons (see §60.110a(a)).
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,			✓	This regulation is not applicable because all storage tanks at the facility have capacities less than the minimum applicability threshold capacity of 75 cubic meters (19,812 gallons), or they have a capacity between 75 and 151 cubic meters (40,000 gallons) and store a liquid with a maximum true vapor pressure less than 15.0 kPa (2.2 psi), or store petroleum prior to custody transfer (see §60.110b(a) & §60.110b(b) & §60.110b(d)(4)).

FEDERAL REGU-LATIONS CITATION	Title	Applies to Entire Facility	Applies to Unit No(s).	Does Not Apply	JUSTIFICATION:
	1984				
NSPS 40 CFR, Subpart GG	Standards of Performance for Stationary Gas Turbines		1		The regulation is applicable as the facility is equipped with a stationary gas turbine with heat input equal to 10 MMBtu/hour or greater, installed on or after October 3, 1977.
NSPS 40 CFR 60, Subpart KKK	Standards of Performance for Equipment Leaks of VOC from Onshore Gas Plants			✓	This regulation is not applicable because the facility is not an onshore natural gas processing plant as defined by the subpart (see §60.630(a)(1)). Natural gas processing plant (gas plant) means any processing site engaged in the extraction of natural gas liquids from field gas, fractionation of mixed natural gas liquids to natural gas products, or both (see §60.631).
NSPS 40 CFR Part 60 Subpart LLL	Standards of Performance for Onshore Natural Gas Processing: SO_2 Emissions			✓	This regulation is not applicable because the facility is not a natural gas processing plant as defined by the subpart. It is not equipped with a sweetening unit (see §60.640(a)).
NSPS 40 CFR 60, Subpart IIII	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines			✓	This regulation is not applicable because the facility is not equipped with stationary compression ignition (CI) internal combustion engines (ICE) that commenced construction after July 11, 2005 and were manufactured after April 1, 2006 (see §60.4200(a)(2)(i)). For the purpose of this subpart, construction commences on the date the engine is ordered by the owner or operator (see §60.4200(a)).
NSPS 40 CFR 60 Subpart JJJJ	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines			✓	This regulation is not applicable because the facility is not equipped with spark ignition (SI) internal combustion engines (ICE) constructed, modified, or reconstructed after June 12, 2006. Unit 3 was constructed prior to the applicability date and has not been modified or reconstructed. See the definitions of construction, modification, and reconstruction referenced in Subpart OOOO below.
NSPS 40 CFR 60 Subpart OOOO	Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution			✓	This regulation is not applicable because the facility is not equipped with "affected" sources that commenced construction, modification or reconstruction after August 23, 2011 and on or before September 18, 2015: gas wells, centrifugal or reciprocating compressors, pneumatic controllers, and storage vessels (see §60.5365). Note that the facility is not a natural gas processing plant as defined by the subpart (see §60.5430). Commenced construction means a continuous program of fabrication, erection or installation (see §60.2). Modification means any physical change in or change in the method of operation of an existing facility which increases emissions or results in new emissions (see §60.2). The following, by themselves, are not modifications: routine maintenance, repair or replacement, production increase without capital expenditure, increase in hours of operation, addition of emission controls, or the relocation or change in

[FEDERAL REGU-LATIONS]() CITATION	**Title**	Applies to **Entire Facility**	Applies to **Unit No(s).**	**Does Not Apply**	**JUSTIFICATION:**
					ownership of an existing facility (see §60.14). Reconstruction means the replacement of components of an existing facility such that the fixed capital cost of the new components exceeds 50 % of the fixed capital cost required to construct a comparable entirely new facility. Fixed capital cost means the capital needed to provide all the depreciable components (see §60.15).
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			✓	This regulation is not applicable because the facility is not equipped with "affected" sources that commenced construction, modification or reconstruction after September 18, 2015: gas wells, centrifugal or reciprocating compressors, pneumatic controllers, storage vessels, sweetening units, pneumatic pumps, and equipment leaks (see §60.5365a). In general, this regulation may apply if existing affected equipment is replaced or new affected equipment is installed. In particular, this regulation will apply to fugitive emissions components at the facility if any engines and compressors are installed. Fugitive components monitoring is required if a compressor station is modified. For the purpose of fugitive components monitoring as required by this subpart, modification of a compressor station is the addition of a compressor or replacement of a compressor with a larger unit (greater total horsepower) (see §60.5365a(j)). Note that the facility is not a natural gas processing plant as defined by the subpart (see §60.5430a). See the definitions of construction, modification, and reconstruction referenced in Subpart OOOO above.
NESHAP 40 CFR 61 Subpart A	General Provisions			✓	This regulation is not applicable because no other 40 CFR Part 61 subparts apply (see §61.01(c)).
NESHAP 40 CFR 61 Subpart V	National Emission Standards for Equipment Leaks (Fugitive Emission Sources)			✓	This regulation is not applicable because none of the listed equipment at the facility is in VHAP service. The provisions of this subpart apply to each of the following sources that are intended to operate in volatile hazardous air pollutant (VHAP) service: pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, surge control vessels, bottoms receivers, and control devices or systems required by this subpart (see §61.240(a)). VHAP service means a piece of equipment either contains or contacts a fluid (liquid or gas) that is at least 10 percent by weight of VHAP. VHAP means a substance regulated under this subpart for which a standard for equipment leaks of the substance has been promulgated (see §61.241).
MACT 40 CFR 63, Subpart A	General Provisions		3		This regulation is applicable because 40 CFR 63 Subpart ZZZZ applies (see §63.1(b)).

FEDERAL REGU-LATIONS CITATION	Title	Applies to Entire Facility	Applies to Unit No(s).	Does Not Apply	JUSTIFICATION:
MACT 40 CFR 63.760 Subpart HH	National Emission Standards for Hazardous Air Pollutants For Oil and Natural Gas Production Facilities			✓	This regulation is not applicable because the facility is not equipped with affected equipment. The facility is an area HAP source. Note that since it is a production field facility (located prior to the point of custody transfer), only HAP emissions from glycol dehydration units and storage vessels are aggregated for a major source determination. Storage vessels include crude oil tanks, condensate tanks, intermediate hydrocarbon liquid tanks, and produced water tanks (see §63.761). At area HAP facilities, the regulation is only applicable to dehydrators (see §63.760(b)(2)).
MACT 40 CFR 63, Subpart HHH	National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities			✓	This regulation is not applicable because the facility is not a natural gas transmission and storage facility as defined by the subpart. A compressor station that transports natural gas prior to the point of custody transfer or to a natural gas processing plant (if present) are not considered a part of the natural gas transmission and storage source category (see §63.1270(a)).
MACT 40 CFR 63 Subpart YYYY	National Emissions Standards for Hazardous Air Pollutants for Stationary Combustion Turbines			✓	This regulation is not applicable, as the facility is an area HAP source (see §63.6080).
MACT 40 CFR 63 Subpart ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE MACT)		3		This regulation is applicable because the facility is equipped with an affected source. The station is an area HAP source as defined by the subpart. For production field facilities, only HAP emissions from engines, turbines, dehydrators, and storage vessels with the potential for flash emissions are aggregated for the HAP major source determination (see §63.6675). Unit 3 is an emergency generator as defined by the Subpart.
NESHAP 40 CFR 64	Compliance Assurance Monitoring			✓	This regulation is not applicable because no equipment at the facility requires a control device to achieve compliance with emission limits or standards where pre control emissions equal or exceed the major source threshold (100 tons per year). (see §64.2(a)).
NESHAP 40 CFR 68	Chemical Accident Prevention			✓	This regulation is not applicable because the facility does not store any of the identified toxic and flammable substances in quantities exceeding the applicability thresholds (see §68.10(a), §68.115(a), and §68.130 Tables 1-4).
Title V – 40 CFR 70	State Operating Permit Programs			✓	This regulation is not applicable because the facility is located within the exterior boundaries of the Jicarilla Apache Indian Reservation, and therefore not within the jurisdiction of the State of New Mexico Environment Department.

FEDERAL REGU-LATIONS CITATION	Title	Applies to **Entire Facility**	Applies to **Unit No(s).**	**Does Not Apply**	**JUSTIFICATION:**
Title V – 40 CFR 71	Federal Operating Permit Programs	✓			This regulation is applicable because the facility is located within the exterior boundaries of the Jicarilla Apache Indian Reservation.
Title IV – Acid Rain 40 CFR 72	Acid Rain			✓	This regulation is not applicable because the facility does not operate a source subject to Title IV of the Clean Air Act (CAA).
Title IV – Acid Rain 40 CFR 73	Sulfur Dioxide Allowance Emissions			✓	This regulation is not applicable because the facility does not operate a source subject to Title IV of the Clean Air Act (CAA).
Title IV – Acid Rain 40 CFR 76	Acid Rain Nitrogen Oxides Emission Reduction Program			✓	This regulation is not applicable to the facility because it does not operate a source subject to Title IV of the Clean Air Act (CAA).
Title VI – 40 CFR 82	Protection of Stratospheric Ozone			✓	This regulation is not applicable to the facility because it does not produce, manufacture, transform, destroy, import, or export ozone-depleting substances; does not maintain or service motor vehicle air conditioning units or refrigeration equipment; and does not sell, distribute, or offer for sale or distribution any product that contains ozone-depleting substances.

Section 7

Alternative Operating Scenarios

No alternative operating scenarios are proposed by Harvest for the facility.

Section 8

Additional Information

Copies of the additional information previously requested by and provided to EPA, and not elsewhere addressed in this application, are included in this Section.

- Include the custody transfer point on the facility diagram or process flow diagram, whether upstream of or at the facility property boundary (e.g., upstream of pigging unit?) and provide copies of current contracts for amount of material transferred to the facility for processing (i.e., should coincide with representative throughputs provided in the permit application, with contingencies identified for possible future increase in throughput).

  - Custody transfer occurs upstream of the facility at individual natural gas wells. No custody transfer occurs at the facility. Natural gas from this facility is discharged to another Harvest compressor station.

  - There are no contracts for the amount of material that can be transferred to the facility. The facility is limited on how much material it can process by the compression capability of the site, which is limited to the single Solar turbine. With the current facility configuration, it can compress approximately 20 MMscf/day (see *Los Mestenios Maximum Facility Throughput)*. Harvest cannot increase this capacity without construction that would need to be approved through the NSR program.

  - Harvest has put together the facility condensate throughput data from 2017 – 2022. The maximum 12-month rolling total at the facility over the last 5 years occurred in 2017 and was 9,109 bbls. The most recent 12-month rolling total was 4,181 bbls. The emissions model was run at a worst-case emissions scenario of 22,141 bbls. There are no plans to make any changes to the site that would increase the facility throughput above what the model was ran at. Any increase in throughput above the model inputs presented in the application would need to be approved by the EPA through the NSR program.

Example of Missing Info for Emission Units and Control Devices

{Please complete filling in missing information and confirm information provided from current application below:}

Emission Unit No.	Type of Unit Serial No.	Manufacturer Model No. Design Heat Input	Operating Range or Size of Unit	Date of Installation and Construction	Primary Use	Control Equipment
T-1	Condensate Storage Tank Serial Number? 2874	American Tank & Steel	400 bbl	Install – Unknown Constructed – 06/1965	Condensate Storage	None
T-2	Condensate Storage Tank Serial Number? 831-2918	American Tank & Steel	400 bbl	Installed – 2014 Constructed – 10/1965	Overflow Condensate Storage	None

F-1	Valves, Flanges, Seals, etc. Unknown	N/A	N/A	N/A	N/A	None
MSS	Maintenance, Startup, and Shutdown Emissions	N/A	N/A	N/A	Pressure relief	None

Insignificant Emissions
{Please complete filling in missing information and confirm information provided from current application below:}

Emission Unit ID No.	Unit Description	Size	Exemptions to Federal Requirements
Unit 4	Fuel Gas Heater	0.3 MMBtu/hr	• < 2 tpy regulated pollutants and < 0.5 tpy HAPs • Provide what method, simulation, etc. used to calculate emissions, e.g., VMGSym, etc. • Emission factors from AP-42 and GRI HapCalc (pg. 62-66 of the application) • Provide Federal citation for exemption • 40 CFR 71.5(c)(11)(ii)
Unit 5	Tank Heater	0.012 MM Btu/hr	Emission factors from AP-42 and GRI HAPCalc Insignificant emission unit (71.5(c)(11)(ii)
L1	Truck Loading Condensate	XX bbl or # of events 22,141 bbls	Emissions calculated using AP-42 and EPA TANKS 4.0 Insignificant emission unit (71.5(c)(11)(ii))
L2	Truck Loading Produced Water	840 bbls	Emissions calculated using AP-42 and EPA TANKS 4.0 Insignificant emission unit (71.5(c)(11)(ii))
T3	Produced Water StorageTank	70 bbl	Emissions calculated using emission factors developed for produced water by Colorado Department of Public Health and Environment (CDPHE) and

Emission Unit ID No.	Unit Description	Size	Exemptions to Federal Requirements
			the Texas Commission on Environmental Quality (TCEQ) Insignificant emission unit 40 CFR 71.5(c)(11)(ii)
T4	Lube Oil Storage Tank	500 gal	Emissions calculated using EPA TANKS 4.0 Insignificant emission unit 40 CFR 71.5(c)(11)(ii)
T5	Lube Oil Storage Tank	500 gal	Emissions calculated using EPA TANKS 4.0 Insignificant emission unit 40 CFR 71.5(c)(11)(ii)
T6	Ambitrol Storage Tank	350 gal	Emissions calculated using EPA TANKS 4.0 Insignificant emission unit 40 CFR 71.5(c)(11)(ii)
T7	Methanol Storage Tank	500 gal	Emissions calculated using EPA TANKS 4.0 Insignificant emission unit 40 CFR 71.5(c)(11)(ii)

- What is the pressure relief valve settings for the condensate tanks? Where does the gas go after flashing? Is it routed back to the process or gas line, if so, where? Please indicate all atmospheric vents on the process flow diagram appropriately.
    - Pressure relief setting – 0.4 oz
    - Flash gas vents to atmosphere

- Is the Equipment Leaks an actual and recent count of components?

    - Component counts are conservatively estimated. Harvest has evaluated some of its more complex sites and developed a component count per equipment type. This is used to estimate component counts for its facilities. In addition, Harvest adds the following to make its estimated count more conservative:
        - 1 valve for each open ended line
        - 2 connectors for each flow meter
        - 2 valves, 2 connectors, and 1 open-end line for each level gauge
        - 1 connector for each pressure gauge

{Please complete filling in missing information and confirm information provided from current application below:}

Unit	Make /Model	Serial Number	Date of construction and installation	Operating Range or Size HP (Also include: 2 or 4 stroke, rich or lean burn?)	Fuel Type	Engine use	Pollution Control
Unit 1	Solar Saturn Turbine T1200	OHC18-S4468	Constructed – 1979 Installed – 1989	1200 HP NA for turbines	Natural gas	Natural gas compression	None
Unit 3	Scania F674DSU-DS11A06	951674	Constructed – 1970-1995 Installed – 2019	250 HP N/A; Compression Ignition	Diesel	Emergency power generation	None

- Harvest has stated that the concentration of the condensate has changed, and these specific changes have decreased the flash emissions from the condensate tanks that would result in an overall emission limit decrease. However, substantiation of such changes to throughput and complete characterization *changes* need to be a part of the permit application. Data that is provided should match up to contracts currently in place vs historically in place, or onsite characterization efforts need to match up with historical vs current data analyses for all streams coming into the facility at specified throughput rates.

  - Harvest did not change the modeled throughput from the previous Title V permit renewal application. Emission models for both renewal applications were run assuming 22,141 barrels of annual condensate throughput. Using the PTE calculation methodology specified in EPA's OOOOa guidance and at 60.5365a, PTE for the tank would be determined using the maximum daily average throughput. Going back over 5 years of condensate throughput data (found in the *Los Mestenios Historic Condensate Throughputs 2017-2022* document), the highest monthly sum of condensate at the facility is 1,362.04 barrels, in February of 2017. This equates to 48.64 barrels per day (1,362.04/28) and 17,755.16 barrels per year (48.64*365). The maximum average daily throughput over the last 5 years is 4,385.84 barrels less than what the model was ran at, making the model output an extra conservative figure.

  - Condensate compositions from 2017, 2018, 2019, and 2021 can be found in the *Los Mestenios Compressor Station Condensate Compositions 2017-2021* document. As the document and the supporting analyses show, C3 and C4 concentrations, the main drivers of VOC flash emissions, have decreased from year to year. Again, Harvest has no contracts that specify the amounts or constituents of material that can be sent to the facility. It has an operational design limit of approximately 20 MMscf/day based on its current configuration. There are no plans on changing anything at the site that would result in an increase in throughputs. Any such changes that would result in an emissions increase or that would result in an increase above the model inputs in the application would be required to be approved by EPA through the NSR program prior to construction.

- Harvest has stated that sampling only occurs "as needed" and no more frequently than once per year. Is this condensate sample retrieved at the same time of year? Are there seasonal changes in material coming into the site? Would the constituents in the sample that is collected in Nov/Dec be different than a sample collected in June/July? Would the sample profile be different? Is there a seasonal effect on flash emissions from the condensate tanks? Is there more flashing in the condensate tanks in the summertime?

    - There is some variability with the amount of material that comes into the site during the different seasons. The sample constituents are the same regardless of the time of year. A condensate sample profile has the potential to change from month to month and year to year, but with sampling occurring on an annual basis, we get a good picture of what material is being collected at the facility. Harvest typically has condensate samples taken during the winter months when liquid flows are higher. With the higher flows, Harvest feels that these samples give us the most conservative estimate for emission modeling, as they also contain the highest amount of C3 and C4 constituents.

    - There are higher flash emissions from the tanks during the summer months with the higher temperatures and lower flash emissions from the tanks during the winter months with the lower temperatures. This is accounted for in the emission model by using average annual temperatures for the local geographic area.

- Are the changes to the condensate concentration permanent changes and indicative of current operations?

    - The 2021 Los Mestenios condensate sample has a higher concentration of heavier components than the sample used in the previous Title V permit renewal application. The available data shows that condensate at the facility has become increasingly heavier from year to year, which will result in lower amounts of flash emissions. In addition, the amount of condensate that is received at the facility has also decreased over the years, going from 8,622.64 barrels in 2017 to 3,667.8 barrels in 2021. This also significantly reduces the amount of actual flash emissions. The most recent condensate data included in this additional information request are indicative of current operations.

- Verify sample location of condensate and indicate on process flow diagram
    - Condensate samples are taken from the facility liquids receiver (VR-1013 on the process flow diagram)

Los Mestenios Condensate Compositions 2017-2021

	2021-08		2019-12		2018-12		2017-12	
% of C3 and C4	6.7039	3.6217	11.9060	7.1220	13.8160	8.9030	14.5590	8.9790
Components	Mol %	Wt. %	Mol %	Wt %	Mol %	Wt %	Mol %	Wt %
Nitrogen	0.1226	0.0326	NIL	NIL	0.038	0.013	NIL	NIL
Methane	4.9619	0.7550	1.0550	0.1910	2.1260	0.4160	1.6910	0.3160
Carbon Dioxide	0.0114	0.0048	0.0520	0.0260	0.0580	0.0310	0.0800	0.0410
Ethane	1.0136	0.2891	1.9140	0.6490	2.5110	0.9200	2.5430	0.8910
Propane	0.5570	0.2330	4.3440	2.1620	5.1710	2.7790	5.3860	2.7670
I-Butane	1.6575	0.9138	2.0950	1.3740	2.4170	1.7120	2.5680	1.7390
n-Butane	4.4894	2.4749	5.4670	3.5860	6.2280	4.4120	6.6050	4.4730
I-Pentane	5.2977	3.6254	5.2840	4.3020	5.9790	5.2580	6.2280	5.2350
n-Pentane	4.6814	3.2036	5.6470	4.5980	6.4790	5.6980	6.6290	5.5720
Cyclopentane	0.0459	0.0305						
Hexanes	5.1819	4.1803	8.9550	8.5520	14.2170	14.6040	8.1720	8.0590
n-Hexane	4.5147	3.6904	6.5170	6.3370	9.2150	9.6840	6.1350	6.1600
2,2,4 Trimethylpentane	0.2871	0.3110					0.1010	0.1350
Benzene	1.1103	0.8226	1.0410	0.9180	1.1160	1.0620	1.3000	1.1830
Cyclohexane	3.9759	3.1738	4.3870	4.1660	4.5650	4.6830		
Heptanes	15.3366	14.3883	13.6290	14.6350	16.7680	19.1490	23.1100	25.2440
n-Heptane	5.7726	5.4862	5.3470	6.0460	4.2200	5.1540		
Toluene	0.4231	0.3698	3.9200	4.0760	2.3330	2.6200	3.8320	4.1140
Octanes	6.0212	6.4994	17.4840	20.9670	12.5370	16.0710	16.9520	20.9500
n-Octane	4.3860	4.7521	2.5010	3.2230	1.0540	1.4670		
Ethylbenzene	0.4533	0.4564	0.3160	0.3780	0.1200	0.1550	0.2310	0.2860
m+P Xylenes	2.1677	2.1827	2.8290	3.3890	0.8200	1.0610	1.8080	2.2370
o-Xylene	0.9768	0.9836						
Nonanes	4.7222	5.4973	4.1860	5.7950	1.6200	2.4090	3.1220	4.4840
n-Nonane	4.3392	5.1956	0.7340	1.0620	0.2030	0.3170		
I-Decanes			1.7050	2.5600	0.2050	0.3250		
Decanes Plus	17.4928	30.4486	0.5910	1.0080	NIL	NIL	3.507	6.114

Los Mestenios Historic Condensate Data

Date	bbl	12-Month Rolling Total
01/16/17	963.82	8786.98
02/16/17	1362.04	9023.40
03/16/17	958.91	8769.19
04/16/17	1088.53	8830.14
05/16/17	864.60	9109.79
06/16/17	554.33	8916.12
07/16/17	197.41	8940.46
08/16/17	347.69	8931.72
09/16/17	206.14	8754.51
10/16/17	415.95	8647.17
11/16/17	713.28	8447.20
12/16/17	949.94	8622.64
01/16/18	1213.61	8872.43
02/16/18	1073.67	8584.06
03/16/18	1181.14	8806.29
04/16/18	782.85	8500.61
05/16/18	757.31	8393.32
06/16/18	395.24	8234.23
07/16/18	580.68	8617.50
08/16/18	388.74	8658.55
09/16/18	214.93	8667.34
10/16/18	402.99	8654.38
11/16/18	610.66	8551.76
12/16/18	795.01	8396.83
01/16/19	807.21	7990.43
02/16/19	772.56	7689.32
03/16/19	1103.18	7611.36
04/16/19	824.02	7652.53
05/16/19	787.59	7682.81
06/16/19	579.32	7866.89
07/16/19	396.81	7683.02
08/16/19	200.14	7494.42
09/16/19	205.62	7485.11
10/16/19	398.18	7480.30
11/16/19	181.62	7051.26
12/16/19	566.91	6823.16
01/16/20	938.29	6954.24
02/16/20	575.09	6756.77
03/16/20	587.54	6241.13
04/16/20	385.50	5802.61
05/16/20	163.35	5178.37
06/16/20	0.00	4599.05
07/16/20	0.00	4202.24

Los Mestenios Historic Condensate Data

Date	bbl	12-Month Rolling Total
08/31/20	0.00	4002.10
09/30/20	0.00	3796.48
10/31/20	182.85	3581.15
11/30/20	0.00	3399.53
12/31/20	200.62	3033.24
01/31/21	386.61	2481.56
02/28/21	214.68	2121.15
03/31/21	405.50	1939.11
04/30/21	369.54	1923.15
05/31/21	388.46	2148.26
06/30/21	367.70	2515.96
07/31/21	188.48	2704.44
08/31/21	0.00	2704.44
09/30/21	365.55	3069.99
10/31/21	211.25	3098.39
11/30/21	368.17	3466.56
12/31/21	401.86	3667.80
01/31/22	618.45	3899.64
02/28/22	410.07	4095.03
03/31/22	718.78	4408.31
04/30/22	366.57	4405.34
05/31/22	351.32	4368.20
06/30/22	180.56	4181.06

Condensate (bbl)

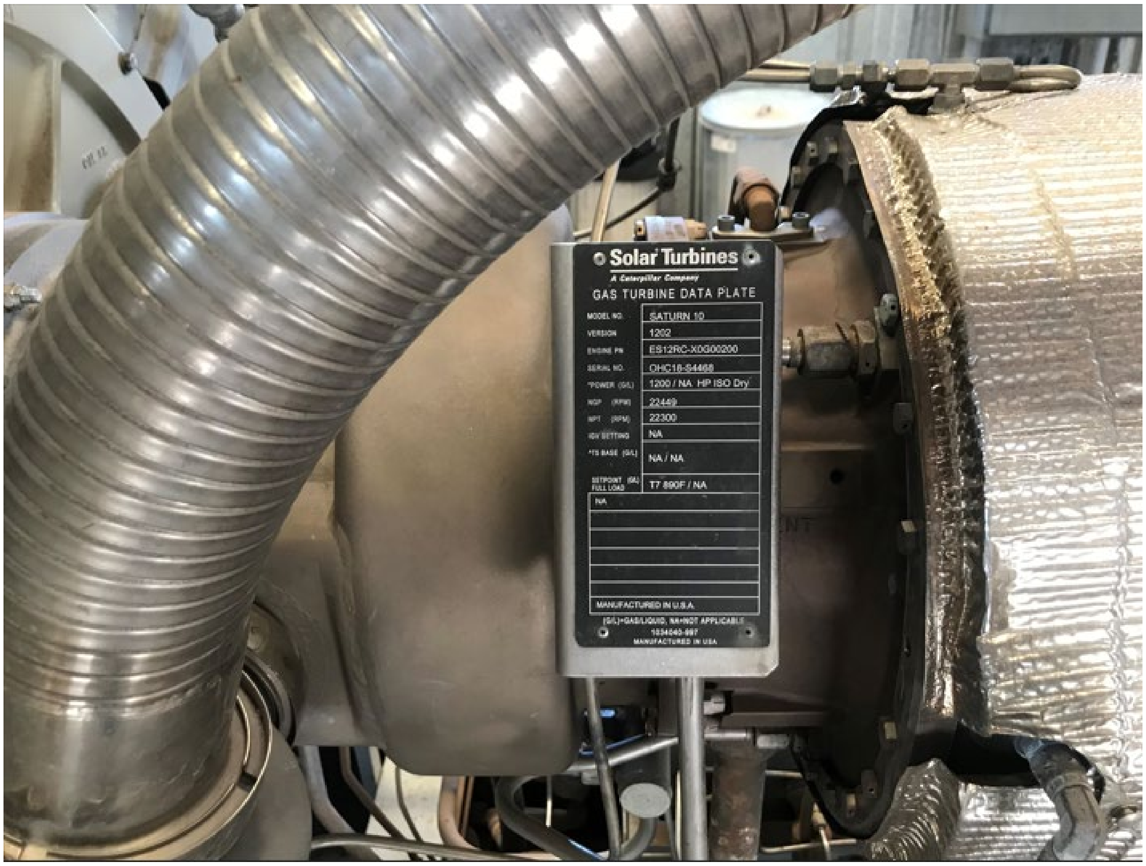
Environmental - Tank Flash

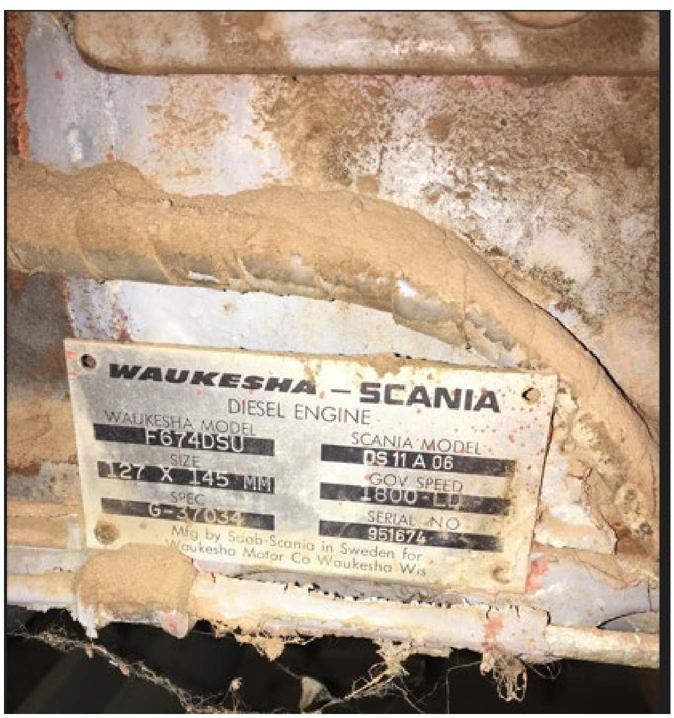
Report Run Date:

Date	Los Mestenios, Condensate (bbl)
01/31/2021	386.61
02/28/2021	214.68
03/31/2021	405.50
04/30/2021	369.54
05/31/2021	388.46
06/30/2021	367.70
07/31/2021	188.48
08/31/2021	0.00
09/30/2021	365.55
10/31/2021	211.25
11/30/2021	368.17
12/31/2021	401.86
Sum	**3,667.80**

Los Mestenios 2021 Pigging Events

Area	Pig Name	Date/Time	Facility
North	Trunk W South - Trk W South 10"	01/05/21	Los Mestenios
North	Trunk W South - Trk W South 10"	02/10/21	Los Mestenios
North	Trunk W South - Trk W South 10"	03/19/21	Los Mestenios
North	Trunk W South - Trk W South 10"	04/27/21	Los Mestenios
North	Trunk W South - Trk W South 10"	05/20/21	Los Mestenios
North	Trunk W South - Trk W South 10"	06/14/21	Los Mestenios
North	Trunk W South - Trk W South 10"	07/13/21	Los Mestenios
North	Trunk W South - Trk W South 8"	01/13/21	Los Mestenios
North	Trunk W South - Trk W South 8"	01/25/21	Los Mestenios
North	Trunk W South - Trk W South 8"	02/11/21	Los Mestenios
North	Trunk W South - Trk W South 8"	02/16/21	Los Mestenios
North	Trunk W South - Trk W South 8"	03/02/21	Los Mestenios
North	Trunk W South - Trk W South 8"	03/15/21	Los Mestenios
North	Trunk W South - Trk W South 8"	03/29/21	Los Mestenios
North	Trunk W South - Trk W South 8"	04/06/21	Los Mestenios
North	Trunk W South - Trk W South 8"	04/13/21	Los Mestenios
North	Trunk W South - Trk W South 8"	05/10/21	Los Mestenios
North	Trunk W South - Trk W South 8"	05/24/21	Los Mestenios
North	Trunk W South - Trk W South 8"	06/08/21	Los Mestenios
North	Trunk W South - Trk W South 8"	06/22/21	Los Mestenios
North	Trunk W South - Trk W South 8"	06/30/21	Los Mestenios
North	Trunk W South - Trk W South 8"	07/07/21	Los Mestenios
North	Trunk W South - Trk W South 10"	07/13/21	Los Mestenios
North	Trunk W South - Trk W South 8"	07/22/21	Los Mestenios
North	Trunk W South - Trk W South 8"	08/04/21	Los Mestenios
North	Trunk W South - Trk W South 8"	08/19/21	Los Mestenios
North	Trunk W South - Trk W South 10"	08/31/21	Los Mestenios
North	Trunk W South - Trk W South 8"	09/01/21	Los Mestenios
North	Trunk W South - Trk W South 8"	09/14/21	Los Mestenios
North	Trunk W South - Trk W South 8"	09/27/21	Los Mestenios
North	Trunk W South - Trk W South 8"	10/18/21	Los Mestenios
North	Trunk W South - Trk W South 10"	10/19/21	Los Mestenios
North	Trunk W South - Trk W South 8"	10/25/21	Los Mestenios
North	Trunk W South - Trk W South 8"	11/01/21	Los Mestenios
North	Trunk W South - Trk W South 10"	11/15/21	Los Mestenios
North	Trunk W South - Trk W South 8"	11/15/21	Los Mestenios
North	Trunk W South - Trk W South 8"	11/22/21	Los Mestenios
North	Trunk W South - Trk W South 10"	12/07/21	Los Mestenios
North	Trunk W South - Trk W South 8"	12/07/21	Los Mestenios
North	Trunk W South - Trk W South 8"	12/14/21	Los Mestenios
North	Trunk W South - Trk W South 8"	12/20/21	Los Mestenios
North	Trunk W South - Trk W South 10"	12/27/21	Los Mestenios
North	Trunk W South - Trk W South 8"	12/28/21	Los Mestenios


Solar Turbines
A Caterpillar Company
GAS TURBINE DATA PLATE
MODEL NO. SATURN 10
VERSION 1202
ENGINE PN ES12RC-X0G00200
SERIAL NO. OHC18-S4468
*POWER (G/L) 1200 / NA HP ISO Dry
NGP (RPM) 22449
NPT (RPM) 22300
IGV SETTING NA
*TS BASE (G/L) NA / NA
SETPOINT (G/L) FULL LOAD T7 890F / NA
NA
MANUFACTURED IN U.S.A.
(G/L)=GAS/LIQUID, NA=NOT APPLICABLE
1034040-897
MANUFACTURED IN USA


WAUKESHA – SCANIA
DIESEL ENGINE
WAUKESHA MODEL
F674DSU
SIZE
127 X 145 MM
SPEC
G-37034
SCANIA MODEL
DS 11 A 06
GOV SPEED
1800-LD
SERIAL NO
951674
Mfg by Saab-Scania in Sweden for
Waukesha Motor Co Waukesha Wis

Solar Turbines
A Caterpillar Company

PREDICTED ENGINE PERFORMANCE

Customer: *Williams*		Model: SATURN 10-1200	
		Package Type: CS/MD	
Job ID: TBD		Match: STANDARD	
Run By: Michael E Clay	Date Run: 28-Dec-07	Fuel System: GAS	
Engine Performance Code: REV. 3.40	Engine Performance Data: REV. 0.0	Fuel Type: SD NATURAL GAS	

DATA FOR MINIMUM PERFORMANCE

Elevation	feet	6700
Inlet Loss	in H20	2.2
Exhaust Loss	in H20	3.3

		1	2	3	4	5	6
Engine Inlet Temperature	deg F	0	20.0	40.0	60.0	80.0	100.0
Relative Humidity	%	60.0	60.0	60.0	60.0	60.0	60.0
Driven Equipment Speed	RPM	22300	22300	22289	22224	22050	21624
Specified Load	HP	FULL	FULL	FULL	FULL	FULL	FULL
Net Output Power	HP	960	942	914	881	837	771
Fuel Flow	mmBtu/hr	10.84	10.64	10.37	10.07	9.75	9.28
Heat Rate	Btu/HP-hr	11295	11296	11351	11437	11645	12036
Therm Eff	%	22.526	22.524	22.415	22.247	21.850	21.139
Engine Exhaust Flow	lbm/hr	42233	41050	39871	38645	37142	35087
Exhaust Temperature	deg F	766	794	818	841	863	887

Fuel Gas Composition (Volume Percent)

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

Fuel Gas Properties

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

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

Notes
Los Mestenios

Unit T1

Unit T2

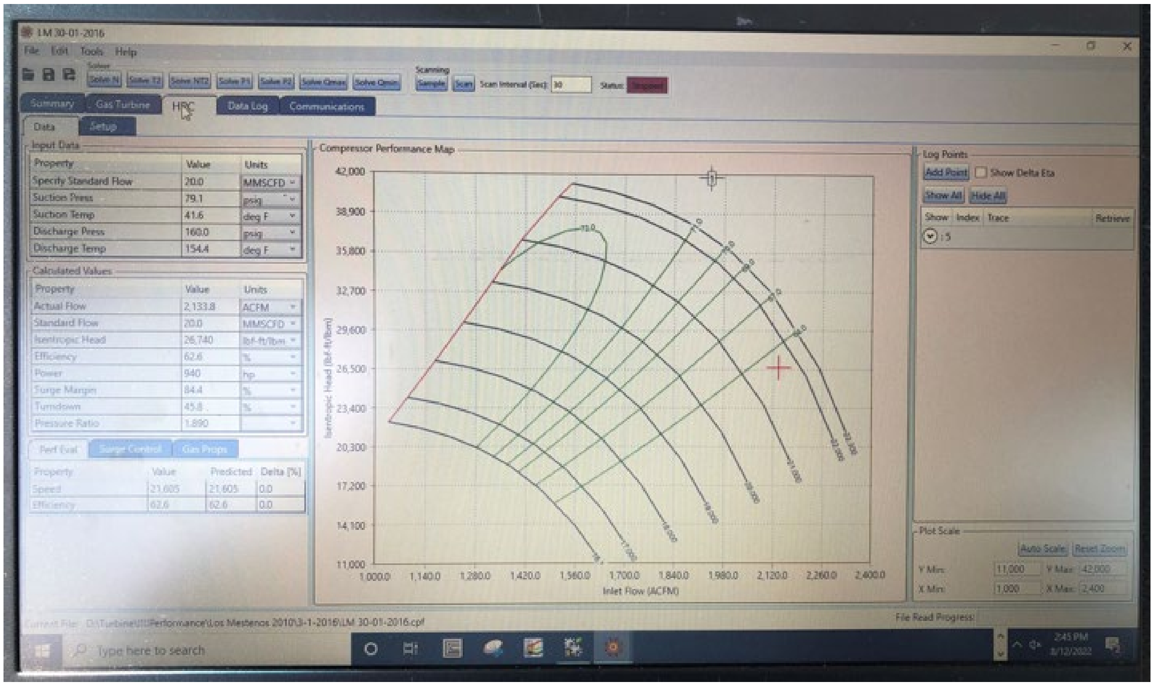
CONFORMS TO
ANSI STD Z21.13
CERTIFIED TO
CSA STD 4.9
Intertek
5000430
MFG by: Cataflow Technologies
3236 Highway 60 East
Bigelow, AR 72016
501-269-2172
Category: 3
Output Rating: 12,000 BTU/HR
Type of Gas: Natural Gas
Maximum Inlet Gas Pressure: 250 PSI
Minimum Inlet Gas Pressure: 5 PSI
Electrical Rating: 12 Volts
Manifold Pressure: 4.5 WC
For non-combustible floors only
Warning:
Avertissement :

Tank Heater

Caterpillar Engine Discharge - Air Gapped and Blind Flanged

Caterpillar Engine Inlet - Air Gapped

Caterpillar Engine Fuel Gas Line – Air Gapped



Maximum Facility Throughput.

Williams Four Corners LLC
Environmental Services
1755 Arroyo Drive
Bloomfield, NM 87413
(505) 632-4700

March 29, 2018

U.S. EPA, Region 6
Air Enforcement Section, 6EN-A
1445 Ross Avenue
Dallas, TX 75202-2733

re: Title V Part 71 Annual Fee - 2017
Permit R6FOP-NM-04-R2 – Los Mestenios Compressor Station

Dear Madam/Sir,

In accordance with condition 4.15 of the Part 71 operating permit number R6FOP-NM-04-R2 for Williams Four Corners LLC's Los Mestenios Compressor Station, please find enclosed an annual report containing the hours of operation of the facility and the calculated annual emissions. Note that there were no periods of non-compliance to report.

The annual permit fee and associated forms (Form FEE – Fee Calculation Worksheet for pollutants emitted during the calendar year 2017 and the Form FF - Fee Filing Form) are being submitted concurrently with this report, in accordance with condition 5.1.2 of the permit.

If you have any questions, please call me at (505) 632-4708.

Sincerely,

Mitch Morris
Environmental Specialist

Attachments

EPA United States Environmental Protection Agency

OMB No. 2060-0336,
Approval Expires 05/31/2019

Federal Operating Permit Program (40 CFR Part 71)
FEE CALCULATION WORKSHEET (FEE)

Use this form initially, or thereafter on an annual basis, to calculate part 71 fees.

A. General Information

Type of fee (Check one): ___Initial _x_ Annual

Deadline for submitting fee calculation worksheet _04_ / _01_ / _2018_

For initial fees, emissions are based on (Check one):

_x_ Actual emissions for the preceding calendar year. (Required in most circumstances.)

___ Estimates of actual emissions for the current calendar year. (Required when operations commenced during the preceding calendar year.)

Date commenced operations ____/____/______

___ Estimates of actual emissions for the preceding calendar year. (Optional after a part 71 permit was issued to replace a part 70 permit, but only if initial fee payment is due between January 1 and March 31; otherwise use actual emissions for the preceding calendar year.)

For annual fee payment, you are required to use actual emissions for the preceding calendar year.

B. Source Information: Complete this section only if you are paying fees but not applying for a permit.

Source or facility name _Williams Four Corners LLC's Los Mestenios Compressor Station_________

Mailing address: Street or P.O. Box _1755 Arroyo Drive_______________________________

City: _Bloomfield___________________________ State: _NM_____ ZIP_87413_________ - ______

Contact person: _Mitch Morris_______________ Title: _Environmental Specialist_______________

Telephone (_505_) _632_ - _4708__ Ext____ Part 71 permit no. _R6FOP-NM-04-R2_________

C. Certification of Truth, Accuracy and Completeness: Only needed if not submitting a separate form CTAC.

I certify under penalty of law, based on information and belief formed after reasonable inquiry, the statements and information contained in this submittal (form and attachments) are true, accurate and complete.

Name (signed) ______________________________

Name (typed) _ Glen Jasek ______________________________ Date: 3 / 29 / 18

D. Annual Emissions Report for Fee Calculation Purposes -- Non-HAP

You may use this to report actual emissions (tons per year) of regulated pollutants (for fee calculation) on a calendar-year basis for both initial and annual fee calculation purposes. Section E is designed to report HAP emissions. Quantify all actual emissions, including fugitives, but do not include insignificant emissions and certain regulated air pollutants that are not counted for fee purposes, such as CO and GHGs (see instructions). Sum the emissions in each column to calculate subtotals. Subtotals should be reported to the nearest tenth (0.1) of a ton at the bottom of the page. If any subtotal exceeds 4,000 tons, enter 4,000 for that column.

This data is for _2017_ (year)

Emission Unit ID	NOx	VOC	SO2	PM10	Lead	Other
1	14.3	0.4				
2	0.0	0.0				
Tk-1	0.0	49.7				
F-1	0.0	3.5				
SUBTOTALS:	14.3	53.6				

E. Annual Emissions Report for Fee Calculation Purposes -- HAP

HAP Identification. Identify individual HAP emitted at the facility, identify the CAS number, and assign a unique identifier for use in the second table in this section. Whenever assigning identifier codes, use "HAP1" for the first, "HAP2" for the second, and so on.

Name of HAP	CAS No	Identifier
Acetaldehyde	75-07-0	HAP _1_
Formaldehyde	50-00-0	HAP _2_
Benzene	71-43-2	HAP _3_
Toluene	108-88-3	HAP _4_
Ethylbenzene	100-41-4	HAP _5_
Xylenes	1330-20-7	HAP _6_
n-Hexane	110-54-3	HAP _7_

HAP Emissions. Report the actual emissions of individual HAP identified above. Use the identifiers assigned in the table above. Include all emissions, including fugitives, and do not include insignificant emissions. Sum the emissions in each column to calculate subtotals. Report subtotals to the nearest tenth (0.1) of a ton at the bottom of the page. If any subtotal exceeds 4,000 tons, enter 4,000.

This data is for _2017_ (year)

Emissions Unit ID	Actual Emissions (Tons/Year)							
	HAP_1_	HAP_2_	HAP_3_	HAP_4_	HAP_5_	HAP_6_	HAP_7_	HAP___
1	0.2	0.3						
2	0.0	0.0						
Tk-1			0.5	1.9	0.1	1.0	6.8	
F-1							0.0	
SUBTOTALS:	0.2	0.3	0.5	1.9	0.1	1.0	6.8	

F. Fee Calculation Worksheet

This worksheet is used to calculate the total fee owed (including the emissions-based fee and the GHG fee adjustment) for both initial and annual fee payment purposes. Reconciliation is only for cases where you are paying the annual fee and you used any type of estimate of actual emissions when you calculated the initial fee. If you do not need to reconcile fees, complete line 1-5 (emissions summary) and then skip down to line 21 (emission calculation). See instructions for more detailed explanation.

EMISSIONS SUMMARY

1. Sum the subtotals from section D of this form (non-HAP) and enter the total, rounded to the nearest tenth (0.1) of a ton.	67.9
2. Sum the subtotals from section E of this form (HAP) and enter the total, rounded to the nearest tenth (0.1) of a ton.	10.7
3. Sum lines 1 and 2.	78.6
4. Enter the emissions that were counted twice. If none, enter "0."	10.7
5. Subtract line 4 from line 3, round to the nearest ton, and enter the result here. This is the **total emissions** that count for fees purposes.	67.9

RECONCILIATION
(WHEN INITIAL FEES WERE BASED ON ESTIMATES FOR THE "CURRENT" CALENDAR YEAR)

Only complete lines 6-10 if you are paying the first annual fee and initial fees were based on estimated actual emissions for the calendar year in which you paid initial fees; otherwise skip to line 11 or to line 21.

6. Enter the total estimated actual emissions for the year the initial fee was paid (previously reported on line 5 of the initial fee form).	
7. If line 5 is greater than line 6, subtract line 6 from line 5, and enter the result. Otherwise enter "0."	
8. If line 6 is greater than line 5, subtract line 5 from line 6, and enter the result. Otherwise enter "0."	
9. If line 7 is greater than 0, multiply line 7 by last year's fee rate ($/ton) and enter the result here. This is the underpayment. Go to line 21.	
10. If line 8 is greater than 0, multiply line 8 by last year's fee rate ($/ton) and enter the result here. This is the overpayment. Go to line 21.	

RECONCILIATION
(WHEN INITIAL FEES WERE BASED ON ESTIMATES FOR THE "PRECEDING" CALENDAR YEAR)

Only complete lines 11-20 if you are paying the first annual fee and initial fees were based on estimated actual emissions for the calendar year preceding initial fee payment; otherwise skip to line 21. If completing this section, you will also need to complete sections D and E to report actual emissions for the calendar year preceding initial fee payment.

11. Sum the actual emissions from section D (non-HAP) for the calendar year preceding initial fee payment and enter the result here.	
12. Sum the actual emissions from section E (HAP) for the calendar year preceding initial fee payment and enter the result here.	
13. Add lines 11 and 12 and enter the total here. These are total actual emissions for the calendar year preceding initial fee payment.	
14. Enter double counted emission from line 13 here. If none, enter "0."	
15. Subtract line 14 from line 13, round to the nearest ton, and enter the result here.	
16. Enter the total estimated actual emissions previously reported on line 5 of the initial fee form. These are estimated actual emissions for the calendar year preceding initial fee payment.	
17. If line 15 is greater than line 16, subtract line 16 from line 15, and enter the result here. Otherwise enter "0."	
18. If line 16 is greater than line 15, subtract line 15 from line 16, and enter the result here. Otherwise enter "0."	
19. If line 17 is greater than 0, multiply line 17 by last year's fee rate ($/ton) and enter the result here. This is the underpayment.	
20. If line 18 is greater than 0, multiply line 18 by last year's fee rate ($/ton) and enter the result on this line. This is the overpayment.	

EMISSION FEE CALCULATION

21. Multiply line 5 (tons) by the current fee rate ($/ton) and enter the result here. This is the unadjusted emissions fee. Continue on to line 23.	$3500.92

GHG FEE ADJUSTMENT

22. If you are submitting an initial permit application and this is the first time you are paying fees, enter $2,236, otherwise enter "0". [Note that any updates to the initial application are covered under this one-time charge.]	0
23. Enter the number of permit modifications (or related permit actions) you have submitted to the permitting authority since you last paid fees. If none, skip to line 25.	0
24. Multiply the number in line 23 by $365 and enter the result.	0

25. If you have submitted a permit renewal application since the last time you paid fees enter $520, otherwise enter "0"	0
26. Sum line 22, 24, and 25 and enter the result. This is the GHG fee adjustment	0
OTHER ADJUSTMENTS	
27. Add the total on line 21 and the total on line 26 and enter the result.	3500.92
28. Enter any underpayment from line 9 or 19 here. Otherwise enter "0."	0
29. Enter any overpayment from line 10 or 20 here. Otherwise enter "0."	0
30. If line 28 is greater than "0," add it to line 27 and enter the result here. If line 29 is greater than "0," subtract this from line 27 and enter the result here. Otherwise enter the amount on line 27 here. This is the fee adjusted for over/underpayment.	3500.92
31. Enter any credit for fee assessment error here. Otherwise, enter "0."	0
32. Subtract line 31 from line 30 and enter the result here. Stop here. This is the **TOTAL FEE (AFTER ADJUSTMENTS)** that you must remit to EPA.	3500.92

Williams Four Corners LLC Los Mestenios Compressor Station
2017 Actual Emissions

	hours	NOx - lb/hr	NOx - tpy	VOC - lb/hr	VOC - tpy
Solar	8438	3.4	14.3	0.1	0.4
Caterpillar	0.0	18.8	0.0	13.5	0.00
Tk-1 flash	8760				46.7
Tk-1 W&B	8760				3.0
F-1	8760			PTE	3.5
			14.3		53.6

turbine NOx emission rates = 9/1/10 EPA method test results (max of three test dates)
engine NOx emission rates = 5/11/10 EPA method test results (max of three test dates)
turbine VOC emission rates = 2010 TV PTE equiv allowables
(5/11/10 & 8/31/10 VOC test results = 0.0 ppmvd NMEOC & 0.0 lb/hr VOC)
engine VOC emission rates = 5/11/10 EPA method test results (max of three test dates)
tank flash VOC emissions = 2017 ProMax calc
tank W&B VOC emissions from 2017 Tanks4.09d calc.
fugitive VOC emissions = TV app emissions w/o SF

FEE CALCULATION

Year 2017 tons of pollutant =	67.9
2017 annual fee at $51.56/ton =	$3,500.92

hours from monthly fuel use (bob3) report - fuel meter #10030-30

	Solar	Caterpillar
Jan-17	743.9	0
Feb-17	668.8	0
Mar-17	731.0	0
Apr-17	521.2	0
May-17	728.8	0
Jun-17	719.9	0
Jul-17	675.5	0
Aug-17	736.1	0
Sep-17	707.5	0
Oct-17	743.4	0
Nov-17	720.0	0
Dec-17	742.4	0
	8438	0.0

ORIGIN ID:FMNA (505) 632-4600
TRISTEN RUYBALID
WILLIAMS FOUR CORNERS LLC
1755 ARROYO DRIVE

BLOOMFIELD, NM 87413
UNITED STATES US

SHIP DATE: 30MAR18
ACTWGT: 0.50 LB
CAD: 105020064/INET3980

BILL SENDER

TO AIR ENFORCEMENT SECTION, 6EN-A
USEPA REGION 6
1445 ROSS AVE

DALLAS TX 75202
(000) 000-0000 REF:
INV:
PO: DEPT:

552J1/07F5/DCA5

FedEx Express

J181118012601uv

MON - 02 APR 10:30A
PRIORITY OVERNIGHT

TRK# 7718 7807 9840
0201

XH KIPA

75202
TX-US DFW

After printing this label:

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

Ruybalid, Tristen

From:	TrackingUpdates@fedex.com
Sent:	Monday, April 02, 2018 9:06 AM
To:	Ruybalid, Tristen
Subject:	[EXTERNAL] FedEx Shipment 771878079840 Delivered

FedEx®

Your package has been delivered

Tracking # 771878079840

Ship date:
Fri, 3/30/2018

Tristen Ruybalid
Williams Four Corners LLC
BLOOMFIELD, NM 87413
US

Delivered

Delivery date:
Mon, 4/2/2018 9:56 am

Air Enforcement Section, 6EN-A
USEPA Region 6
1445 ROSS AVE
DALLAS, TX 75202
US

Personalized Message

Los Mestenios

Shipment Facts

Our records indicate that the following package has been delivered.

Tracking number:	771878079840
Status:	Delivered: 04/02/2018 09:56 AM Signed for By: C.LEWIS
Signed for by:	C.LEWIS
Delivery location:	DALLAS, TX
Delivered to:	Receptionist/Front Desk
Service type:	FedEx Priority Overnight
Packaging type:	FedEx Envelope
Number of pieces:	1
Weight:	0.50 lb.
Special handling/Services:	Deliver Weekday
Standard transit:	4/2/2018 by 10:30 am

This tracking update has been requested by:

Company name:	Williams Four Corners LLC
Name:	Tristen Ruybalid

Email: Mitch.Morris@williams.com

Please do not respond to this message. This email was sent from an unattended mailbox. This report was generated at approximately 10:05 AM CDT on 04/02/2018.

All weights are estimated.

To track the latest status of your shipment, click on the tracking number above.

This tracking update has been sent to you by FedEx on behalf of the Requestor Mitch.Morris@williams.com. FedEx does not validate the authenticity of the requestor and does not validate, guarantee or warrant the authenticity of the request, the requestor's message, or the accuracy of this tracking update.
Standard transit is the date and time the package is scheduled to be delivered by, based on the selected service, destination and ship date. Limitations and exceptions may apply. Please see the FedEx Service Guide for terms and conditions of service, including the FedEx Money-Back Guarantee, or contact your FedEx Customer Support representative.

Thank you for your business.

Williams Four Corners LLC
Environmental Services
1755 Arroyo Drive
Bloomfield, NM 87413
(505) 632-4700

March 29, 2018

U.S. Bank
Government Lockbox 979078
US EPA FOIA & Misc. Payments
1005 Convention Plaza
SL-MO-C2-GL
St. Louis, MO 63101

re: Title V Part 71 Annual Fee - 2017
Permit R6FOP-NM-04-R2 – Los Mestenios Compressor Station

Dear Madam/Sir,

In accordance with condition 5.1 of the Part 71 operating permit number R6FOP-NM-04-R2 for Williams Four Corners LLC's Los Mestenios Compressor Station, please find enclosed the Form FEE – Fee Calculation Worksheet for pollutants emitted during the calendar year 2017, and Form FF for the filing of payment for these emissions. Also enclosed is check number 4000198507 in the amount of $3,500.92 for the annual permit fee for operations during calendar year 2017.

If you have any questions, please call me at (505) 632-4708.

Sincerely,

Mitch Morris
Environmental Specialist

Attachments

Xc: U.S. EPA Region VI
Air Permits Section, 6PD-R
1445 Ross Avenue
Dallas, TX 75202-2733

United States Environmental Protection Agency

OMB No. 2060-0336,
Approval Expires 05/31/2019

Federal Operating Permit Program (40 CFR Part 71)
FEE FILING FORM (FF)

The purpose of this form is to ensure that fee payments made by check are credited to the proper facility and to the proper government account. Send this form, along with form **FEE** and the check, to the appropriate lockbox bank address listed on the following page. This form is required whenever you pay by check, including for initial and annual fee payments. Part 71 fees may be paid by check or electronically, and further information on making payments by check or electronically is provided on the following page.

Source or Facility Name _Williams Four Corners LLC's Los Mestenios Compressor Station__

Source Location _Rio Arriba County, New Mexico____________

EPA Region where Source Located _Region 6____________

Mailing Address:

Street/P.O. Box _1755 Arroyo Drive____________

City_Bloomfield____________

State _NM_____ ZIP _87413_________ - ______

Contact Person:_Mitch Morris____________

Title_Environmental Specialist____________

Telephone (505) 632 - 4708 Ext. __________

Total Fee Payment Remitted: $ _3500.92_____

WILLIAMS FIELD SERVICES GROUP LLC
PO BOX 21218
TULSA, OK 74121-1218

COMPANY NUMBER: 4000

CHECK NUMBER: 4000198507

PAY DATE	SUPPLIER NO.	SUPPLIER NAME	CHECK TOTAL
08-MAR-18	400605	US ENVIRONMENTAL PROTECTION AGENCY	3,500.92

Invoice Date	Invoice Or Credit Memo / Invoice Description	Gross	Discount	Net
07-MAR-18	07-MAR-18-400605 / LOS MESTENIOS-TITLE V PART 71 ANNUA	3,500.92	0.00	3,500.92
		Page Totals	0.00	3,500.92

Supplier Support 1-866-778-2665

VERIFY THE AUTHENTICITY OF THIS MULTI-TONE SECURITY DOCUMENT. CHECK BACKGROUND AREA CHANGES COLOR GRADUALLY FROM TOP TO BOTTOM.

WILLIAMS FIELD SERVICES GROUP LLC
PO BOX 21218
TULSA, OK 74121-1218
Company Number: 4000

JPMorgan Chase Bank, N.A. 70-2322/719
Chicago, IL

Check Number: 4000198507
Check Date: 08-MAR-18

Three Thousand Five Hundred Dollars And Ninety-Two Cents

Pay To The Order Of:
US ENVIRONMENTAL PROTECTION AGENCY
US BANK - GOVT LOCKBOX 979078
US EPA FOIA & MISC PAYMENTS
1005 CONVENTION PLAZA, SL-MO-C2-GL
ST LOUIS, MO 63101 United States

PAY (USD)	$3,500.92

Authorized Signature

⑈4000198507⑈ ⑆071923226⑆ 0010131271⑈

TWO PAYMENT OPTIONS FOR PART 71 FEES:

OPTION 1 - CHECK PAYMENT VIA U.S. POSTAL SERVICE

- Fee payment shall be in U.S. currency drawn on a U.S. bank.
- Check should be made out to the order of the "U.S. Environmental Protection Agency."
- Indicate on the check that the payment is for "Part 71 Fee Payment."
- Make a photocopy of the check.

- **Send the following to the EPA region (or delegate agency):**
  - ✓ Form *FEE* (EPA Form 5900-03) and
  - ✓ Photocopy of check

- **Send the following to one of the addresses below:**
  - ✓ Form *FF* (EPA Form 5900-06) and
  - ✓ Original check

Address** for **Regular Mail (U.S. Postal Service):	**Address *for Express Delivery (or If Physical Address is Required):***
U.S. EPA FOIA and Misc. Payments Cincinnati Finance Center PO Box 979078 St. Louis, MO 63197-9000	U.S. Bank Government Lockbox 979078 US EPA FOIA & Misc. Payments 1005 Convention Plaza Mail Station SL-MO-C2-GL St. Louis, MO 63101

- **Tips for Completing form FF (Fee Filing Form)**
  - ***Source Location:*** Physical location - Street address (if any), City, County, and State.
  - ***Mailing Address:*** Address for the EPA to send correspondence. This address may be different from the source location, such as a corporate office.
  - ***EPA Region:*** EPA region in which the source is located (e.g., EPA Region 8).
  - ***Contact:*** Person that can best answer questions concerning fee payment.

OPTION 2 – ONLINE PAYMENT

- Part 71 fees can be paid online at www.pay.gov using form **"SFO 1.1 (EPA Miscellaneous Payments - Cincinnati Finance Center)."** *Note that EPA Form 5900-06 cannot be used for online payments.*

- **Tips for completing online form SFO 1.1:**
  - From the "*Type of Payment"* drop down menu, select "Other/Miscellaneous"
  - On the "*Bill# or description"* line, enter "Part 71 Fee Payment"
  - In the "*Comments"* box, enter the source or facility name and the part 71 permit number associated with this payment.

- **After submitting payment online, send the following to the EPA region (or delegate agency):**
  - Form *FEE* (EPA Form 5900-03) and
  - Copy of the electronic payment confirmation generated by the online payment system.

- **FOR MORE INFORMATION:** The following link provides detailed information on how to make payments to EPA for part 71 fees, penalties, and interest, including contact information for EPA's Accounts Receivable Branch in Cincinnati https://www.epa.gov/financial/makepayment

Contacts: Craig Steffen (US EPA Finance): 513-487-2091
Natalie Pearson (U.S. Bank): 314-418-4087

EPA United States Environmental Protection Agency

OMB No. 2060-0336,
Approval Expires 05/31/2019

Federal Operating Permit Program (40 CFR Part 71)

CERTIFICATION OF TRUTH, ACCURACY, AND COMPLETENESS (CTAC)

This form must be completed, signed by the "Responsible Official" designated for the facility or emission unit, and sent with each submission of documents (i.e., application forms, updates to applications, reports, or any information required by a part 71 permit).

A. Responsible Official

Name: (Last) Jasek (First) Glen (MI) ____

Title Vice President and General Manager, Four Corners Area

Street or P.O. Box 1755 Arroyo Drive

City Bloomfield State NM ZIP 87413 - ____

Telephone (505) 632 - 4628 Ext. __ Facsimile (505) 632 - 4781

B. Certification of Truth, Accuracy and Completeness (to be signed by the responsible official)

I certify under penalty of law, based on information and belief formed after reasonable inquiry, the statements and information contained in these documents are true, accurate and complete.

Name (signed) Glen Jasek

Name (typed) Glen Jasek Date: 3 / 29 / 18

ORIGIN ID:FMNA (505) 632-4600
TRISTEN RUYBALID
WILLIAMS FOUR CORNERS LLC
1755 ARROYO DRIVE

BLOOMFIELD, NM 87413
UNITED STATES US

SHIP DATE: 30MAR18
ACTWGT: 0.50 LB
CAD: 105020064/INET3980

BILL SENDER

TO **US EPA FOIA & MISC. PAYMENTS**
US BANK - GOVNMNT LOCKBOX 979078
1005 CONVENTION PLAZA
SL-MO-C2-GL
SAINT LOUIS MO 63101
(000) 000-0000 REF:
INV:
PO: DEPT:

552J1/07F5/DCA5

FedEx Express

E

J181118012601uv

TRK# 0201 **7718 7816 9338**

MON - 02 APR 10:30A
PRIORITY OVERNIGHT

XX CPSA

63101
MO-US **STL**

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2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

Ruybalid, Tristen

From:	TrackingUpdates@fedex.com
Sent:	Monday, April 02, 2018 7:47 AM
To:	Ruybalid, Tristen
Subject:	[EXTERNAL] FedEx Shipment 771878169338 Delivered

Your package has been delivered

Tracking # 771878169338

Ship date:
Fri, 3/30/2018

Tristen Ruybalid
Williams Four Corners LLC
BLOOMFIELD, NM 87413
US

Delivered

Delivery date:
Mon, 4/2/2018 8:41 am

US EPA FOIA & Misc. Payments
US Bank - Govnmnt Lockbox 979078
1005 Convention Plaza
SL-MO-C2-GL
SAINT LOUIS, MO 63101
US

Personalized Message

Los Mestenios

Shipment Facts

Our records indicate that the following package has been delivered.

Tracking number:	771878169338
Status:	Delivered: 04/02/2018 08:41 AM Signed for By: M.KINDIN
Signed for by:	M.KINDIN
Delivery location:	SAINT LOUIS, MO
Delivered to:	Mailroom
Service type:	FedEx Priority Overnight
Packaging type:	FedEx Envelope
Number of pieces:	1
Weight:	0.50 lb.
Special handling/Services:	Deliver Weekday
Standard transit:	4/2/2018 by 10:30 am

This tracking update has been requested by:

Company name: Williams Four Corners LLC

Name:	Tristen Ruybalid
Email:	Mitch.Morris@williams.com

All weights are estimated.

To track the latest status of your shipment, click on the tracking number above.

This tracking update has been sent to you by FedEx on behalf of the Requestor Mitch.Morris@williams.com. FedEx does not validate the authenticity of the requestor and does not validate, guarantee or warrant the authenticity of the request, the requestor's message, or the accuracy of this tracking update.
Standard transit is the date and time the package is scheduled to be delivered by, based on the selected service, destination and ship date. Limitations and exceptions may apply. Please see the FedEx Service Guide for terms and conditions of service, including the FedEx Money-Back Guarantee, or contact your FedEx Customer Support representative.

Thank you for your business.

HARVEST MIDSTREAM

1755 Arroyo Drive
Bloomfield, NM 87413
Phone 505-632-4600
Fax 505-632-4682
harvestmidstream.com

July 17, 2019

U.S. EPA, Region 6
Air and Radiation Division Air Permits Section (ARPE)
1201 Elm Street, Suite 500
Dallas, TX 75270

re: Title V Part 71 Annual Fee - 2018
Permit R6FOP-NM-04-R2 – Los Mestenios Compressor Station

Dear Madam/Sir,

In accordance with condition 4.15 of the Part 71 operating permit number R6FOP-NM-04-R2 for Harvest Four Corners, LLC's Los Mestenios Compressor Station, please find enclosed an annual report containing the hours of operation of the facility and the calculated annual emissions. Note that except for the late submittal of the annual report addressed below, there were no periods of non-compliance to report.

The annual permit fee and associated forms (Form FEE – Fee Calculation Worksheet for pollutants emitted during the calendar year 2018 and the Form FF - Fee Filing Form) will be submitted no later than July 20, 2019 in accordance with condition 5.1.2 of the permit.

Note that due to the Fall 2018 change in ownership and initiation of a new compliance tracking system, this annual report was not submitted by the April 1, 2019 as required by the permit. The fee is being paid within the appropriate timeline. This deviation will be noted in the next six-month report.

If you have any questions, please call me at (505) 632-4625 or Bobby Myers of Cirrus Consulting at (801) 484-4412.

Sincerely,

Monica Smith

Monica Smith
Environmental Specialist

Attachments

EPA United States Environmental Protection Agency

OMB No. 2060-0336,
Approval Expires 05/31/2019

Federal Operating Permit Program (40 CFR Part 71)
FEE CALCULATION WORKSHEET (FEE)

Use this form initially, or thereafter on an annual basis, to calculate part 71 fees.

A. General Information

Type of fee (Check one): ___Initial _x_ Annual

Deadline for submitting fee calculation worksheet _04_/_01_/_2019_

For initial fees, emissions are based on (Check one):

_x_ Actual emissions for the preceding calendar year. (Required in most circumstances.)

___ Estimates of actual emissions for the current calendar year. (Required when operations commenced during the preceding calendar year.)

Date commenced operations ____/____/______

___ Estimates of actual emissions for the preceding calendar year. (Optional after a part 71 permit was issued to replace a part 70 permit, but only if initial fee payment is due between January 1 and March 31; otherwise use actual emissions for the preceding calendar year.)

For annual fee payment, you are required to use actual emissions for the preceding calendar year.

B. Source Information: Complete this section only if you are paying fees but not applying for a permit.

Source or facility name _Harvest Four Corners, LLC's Los Mestenios Compressor Station_________

Mailing address: Street or P.O. Box _1755 Arroyo Drive_________________________________

City: _Bloomfield___________________________ State: _NM_____ ZIP_87413_________ - ______

Contact person: _Monica Smith______________ Title: _Environmental Specialist______________

Telephone (_505_) _632_ - _4625__ Ext____ Part 71 permit no. _R6FOP-NM-04-R2_________

C. Certification of Truth, Accuracy and Completeness: Only needed if not submitting a separate form CTAC.

I certify under penalty of law, based on information and belief formed after reasonable inquiry, the statements and information contained in this submittal (form and attachments) are true, accurate and complete.

Name (signed) ______________________________

Name (typed) _ Travis Jones_______________________________ Date: 7 / 15 / 2019

E. Annual Emissions Report for Fee Calculation Purposes -- HAP

HAP Identification. Identify individual HAP emitted at the facility, identify the CAS number, and assign a unique identifier for use in the second table in this section. Whenever assigning identifier codes, use "HAP1" for the first, "HAP2" for the second, and so on.

Name of HAP	CAS No	Identifier
Acetaldehyde	75-07-0	HAP _1_
Formaldehyde	50-00-0	HAP _2_
Benzene	71-43-2	HAP _3_
Toluene	108-88-3	HAP _4_
Ethylbenzene	100-41-4	HAP _5_
Xylenes	1330-20-7	HAP _6_
n-Hexane	110-54-3	HAP _7_

HAP Emissions. Report the actual emissions of individual HAP identified above. Use the identifiers assigned in the table above. Include all emissions, including fugitives, and do not include insignificant emissions. Sum the emissions in each column to calculate subtotals. Report subtotals to the nearest tenth (0.1) of a ton at the bottom of the page. If any subtotal exceeds 4,000 tons, enter 4,000.

This data is for _2018_ (year)

Emissions Unit ID	Actual Emissions (Tons/Year)							
	HAP_1_	HAP_2_	HAP_3_	HAP_4_	HAP_5_	HAP_6_	HAP_7_	HAP___
1	0.2	0.3						
2	0.0	0.0						
Tk-1			0.3	0.2	0.0	0.0	7.0	
F-1							0.5	
SUBTOTALS:	0.2	0.3	0.3	0.2	0.0	0.0	7.5	

F. Fee Calculation Worksheet

This worksheet is used to calculate the total fee owed (including the emissions-based fee and the GHG fee adjustment) for both initial and annual fee payment purposes. Reconciliation is only for cases where you are paying the annual fee and you used any type of estimate of actual emissions when you calculated the initial fee. If you do not need to reconcile fees, complete line 1-5 (emissions summary) and then skip down to line 21 (emission calculation). See instructions for more detailed explanation.

EMISSIONS SUMMARY

1. Sum the subtotals from section D of this form (non-HAP) and enter the total, rounded to the nearest tenth (0.1) of a ton.	72.1
2. Sum the subtotals from section E of this form (HAP) and enter the total, rounded to the nearest tenth (0.1) of a ton.	8.5
3. Sum lines 1 and 2.	80.6
4. Enter the emissions that were counted twice. If none, enter "0."	8.5
5. Subtract line 4 from line 3, round to the nearest ton, and enter the result here. This is the **total emissions** that count for fees purposes.	72.1

RECONCILIATION
(WHEN INITIAL FEES WERE BASED ON ESTIMATES FOR THE "CURRENT" CALENDAR YEAR)

Only complete lines 6-10 if you are paying the first annual fee and initial fees were based on estimated actual emissions for the calendar year in which you paid initial fees; otherwise skip to line 11 or to line 21.

6. Enter the total estimated actual emissions for the year the initial fee was paid (previously reported on line 5 of the initial fee form).	
7. If line 5 is greater than line 6, subtract line 6 from line 5, and enter the result. Otherwise enter "0."	
8. If line 6 is greater than line 5, subtract line 5 from line 6, and enter the result. Otherwise enter "0."	
9. If line 7 is greater than 0, multiply line 7 by last year's fee rate ($/ton) and enter the result here. This is the underpayment. Go to line 21.	
10. If line 8 is greater than 0, multiply line 8 by last year's fee rate ($/ton) and enter the result here. This is the overpayment. Go to line 21.	

RECONCILIATION
(WHEN INITIAL FEES WERE BASED ON ESTIMATES
FOR THE "PRECEDING" CALENDAR YEAR)

Only complete lines 11-20 if you are paying the first annual fee and initial fees were based on estimated actual emissions for the calendar year preceding initial fee payment; otherwise skip to line 21. If completing this section, you will also need to complete sections D and E to report actual emissions for the calendar year preceding initial fee payment.

11. Sum the actual emissions from section D (non-HAP) for the calendar year preceding initial fee payment and enter the result here.	
12. Sum the actual emissions from section E (HAP) for the calendar year preceding initial fee payment and enter the result here.	
13. Add lines 11 and 12 and enter the total here. These are total actual emissions for the calendar year preceding initial fee payment.	
14. Enter double counted emission from line 13 here. If none, enter "0."	
15. Subtract line 14 from line 13, round to the nearest ton, and enter the result here.	
16. Enter the total estimated actual emissions previously reported on line 5 of the initial fee form. These are estimated actual emissions for the calendar year preceding initial fee payment.	
17. If line 15 is greater than line 16, subtract line 16 from line 15, and enter the result here. Otherwise enter "0."	
18. If line 16 is greater than line 15, subtract line 15 from line 16, and enter the result here. Otherwise enter "0."	
19. If line 17 is greater than 0, multiply line 17 by last year's fee rate ($/ton) and enter the result here. This is the underpayment.	
20. If line 18 is greater than 0, multiply line 18 by last year's fee rate ($/ton) and enter the result on this line. This is the overpayment.	
EMISSION FEE CALCULATION	
21. Multiply line 5 (tons) by the current fee rate ($/ton) and enter the result here. This is the unadjusted emissions fee. Continue on to line 23.	$3807.60
GHG FEE ADJUSTMENT	
22. If you are submitting an initial permit application and this is the first time you are paying fees, enter $2,236, otherwise enter "0". [Note that any updates to the initial application are covered under this one-time charge.]	0
23. Enter the number of permit modifications (or related permit actions) you have submitted to the permitting authority since you last paid fees. If none, skip to line 25.	0
24. Multiply the number in line 23 by $365 and enter the result.	0

25. If you have submitted a permit renewal application since the last time you paid fees enter $520, otherwise enter "0"	0
26. Sum line 22, 24, and 25 and enter the result. This is the GHG fee adjustment	0
OTHER ADJUSTMENTS	
27. Add the total on line 21 and the total on line 26 and enter the result.	3807.60
28. Enter any underpayment from line 9 or 19 here. Otherwise enter "0."	0
29. Enter any overpayment from line 10 or 20 here. Otherwise enter "0."	0
30. If line 28 is greater than "0," add it to line 27 and enter the result here. If line 29 is greater than "0," subtract this from line 27 and enter the result here. Otherwise enter the amount on line 27 here. This is the fee adjusted for over/underpayment.	3807.60
31. Enter any credit for fee assessment error here. Otherwise, enter "0."	0
32. Subtract line 31 from line 30 and enter the result here. Stop here. This is the **TOTAL FEE (AFTER ADJUSTMENTS)** that you must remit to EPA.	3807.60

INSTRUCTIONS FOR FEE
FEE CALCULATION WORKSHEET

Information Collection Burden Estimates

The public reporting and recordkeeping burden for this collection of information is estimated to average 247 hours per respondent per year. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

DETAILED INSTRUCTIONS

Use this form to initially or annually calculate fees. This form is for paying fees to EPA or a delegate agency (such as a State or tribe) under a part 71 operating permit program. The requirements for paying fees under part 71 programs, as well as the forms and instructions contained herein, are based on the requirements of 40 CFR 71.9

There may be cases, under a part 71 program, when you are not required to complete this form or pay the EPA fee rate (where the part 71 program has been delegated and EPA's fee has been suspended because EPA incurs no administrative costs). In such cases, the delegate agency will instruct you on how to calculate fees and how to pay them. If in doubt, contact your permitting authority.

General Rules for Fee Calculation under Part 71:

- Use the fee rate in effect at the time you pay the fee regardless of the time period that the emissions data represents. For example, if the annual fee for the current year is due July 1, you would use the fee rate in effect for the current year and the actual emissions for the previous calendar year.
- Do not prorate initial or annual fees. Pay full fees for the entire calendar year regardless of how many days you operated or were subject to the program during the previous or current year.
- Do not hesitate to contact the permitting authority if you have any doubt about how to calculate fees, especially if you have an unusual set of circumstances not addressed specifically by these forms or whenever the permit requirements appear to conflict with these forms (however, always assume the permit requirements take precedence in such cases).

Section A. General Information

The deadline for submitting the fee form and paying the fee for initial fee payment purposes for most sources is the same deadline as for submitting all other forms required for the initial permit application. Other deadlines apply for initial fee payment in certain limited circumstances:

- When a source is subject to part 71 because of an unresolved EPA objection to a part 70 permit, fees are not due with the part 71 application, but are due 3 months following the date of the issuance of the part 71 permit.
- When EPA withdraws approval of a part 70 program and implements a part 71 programs, fees are submitted according to a schedule based on the source's SIC code (within 6 to 9 months of the effective date of the part 71 program).

The deadline for submitting the fee form and paying the fee for annual fee payment purposes is the anniversary date of initial fee payment. This is required whether or not a permit has been issued. If you were required to pay initial fees between January 1 and March 31, the regulations allow for submittal of annual fees no later than April 1.

Whether you are paying initial or annual fees see the instructions for sections D and E for more information on which calendar-year emission data to use (preceding or current year) and how to quantify such emissions (actual emissions or estimates of actual emissions).

Section B. Source Information

Complete this section only if you are preparing this form for submittal at a different time than for the other portions of an initial application or for annual fee purposes.

Section C. Certification of Truth, Accuracy and Completeness

This form and any other document required by a permit must be signed by a responsible official certifying truth, accuracy and completeness of the information. If you are submitting a separate **CTAC** form, there is no need to complete this section of the form. If you complete this section, there is no need to submit form **CTAC** separately.

Section D. Annual Emissions Report for Fee Calculation Purposes – Non-HAP

Calculate actual emissions of regulated pollutants (for fee calculation), except for HAP, on a calendar-year basis for the facility in this section. Section E is provided to report actual emissions of HAP. Note the phrase "regulated pollutant (for fee calculation)" is any "regulated air pollutant" except carbon monoxide (CO), and pollutants regulated solely because they are: 1) subject to regulation under section 112(r) of the Act, or 2) a class I or II substance under title VI of the Act. **Note that GHG emissions are not counted for fee purposes.**

If more than one year of data is being submitted with the fee calculation worksheet, copy this page and complete a separate table for each year. If you are submitting an initial application, you may use emissions data already reported on form **EMISS**, provided this is the same data you would otherwise report in sections D and E of this form. If using **EMISS** in this manner, please note this on the fee calculation form. Also, sources must submit attachments to this form to show (at a minimum) examples of the calculations used to determine these values.

Show actual emissions for each listed air pollutant for each emission unit. Values should be reported to the nearest tenth (0.1) of a ton.

The column for "other" is for other regulated pollutants (for fee calculation) not already listed on the form. Write in the name of the pollutant in the proximity of the "other" column. If more than one such pollutant, show the pollutants, and the totals on an attachment.

Actual emissions must be calculated using actual operating hours, production rates, in-place control equipment, and types of materials processed, stored, or combusted over the preceding calendar year. Sources that have been issued title V permits are required to compute actual emissions using compliance methods required by the permits, such as monitoring or source testing data. If this is not possible, actual emissions should be determined using other federally recognized procedures.

For initial fee calculation purposes, most sources are required to use actual emissions for the preceding calendar year. However, there are certain exceptions where estimates of actual emissions are either required or allowed in place of actual emissions for the preceding calendar year (see table below):

Exception	Emission Data
When the source commenced operation during the preceding calendar year.	Estimates of actual emissions for the "current" calendar year are required
When EPA withdraws approval of a part 70 program and implements a part 71 program, and the source pays initial part 71 fees between January 1 and March	Either estimates of actual emissions for the "preceding" calendar year or actual emissions for the preceding calendar year may be used.
When a part 71 permit was issued following an unresolved objection to a part 70 permit, and the source is required to pay initial part 71 fees between January 1 and March 31.	Either estimates of actual emissions for the "preceding" calendar year or actual emissions for the preceding calendar year may be used.

For annual fee purposes, fee calculation should be based on actual emissions for the preceding calendar year in all cases.

In most cases you will only need to report one set of emission data using sections D and E of this form (the data that is the basis of the initial or annual fee being paid as explained above). This data is subsequently carried over to lines 1 and 2 of section F (Fee Calculation Worksheet) of the form.

However, there is one exception where you would be required to report two different sets of emissions data using sections D and E – when paying the first annual fee and reconciliation is required because the initial fee was based on estimated actual emissions for the "preceding" calendar year (the year preceding initial fee payment). In this case, the two data sets would be:

- actual emissions for the year initial fees paid (for annual fee purposes in lines 1-5 of section F of the form), and
- actual emissions for the year preceding initial fee payment (for reconciliation in lines 11-20 of the form)

Whenever reconciliation is required as part of annual fee payment, you will also need a copy of the fee forms you previously submitted with initial fee payment in order to obtain the value of estimated actual emissions.

Include all fugitive emissions in the calculation of actual emissions, including those that do not count for applicability. Do not include any insignificant emissions identified on form **IE**.

The subtotal line in section D of the form is provided at the bottom of each column to enter total emissions for each pollutant reported above. Each subtotal should be reported to the nearest tenth (0.1) of a ton. If any subtotal exceeds 4,000 tons, enter 4,000 tons for that column.

Any necessary adjustments for double counting of emissions will be performed later in section F.

Section E. Annual Emissions Report for Fee Calculation Purposes -- HAP

List the actual emissions of individual HAP from each emission unit. If you are initially applying for a permit, you may use the emissions of HAP reported on form **EMISS,** instead of completing this section of this form, provided these emissions are the same as you would otherwise report using this section of the form. If you are doing this, please note it on the form.

This section is composed of two tables. The first table is to identify individual HAP emitted at each emission unit. Assign a unique identifier for use in the second table. Please use "HAP1" for the first

one, "HAP2" for the second one, and so on. The second table is to calculate the actual emission of individual HAP at each emission unit. Use the identifiers assigned in the first table to label the column headers for the second table. You may round and report these emissions to the nearest tenth (0.1) of a ton. Sum the values in each column and enter the subtotals at the bottom of the table. If any subtotal exceeds 4,000 tons, enter 4,000 for that column.

See instructions for section D for more information on reporting emissions data.

Section F. Fee Calculation Worksheet

This worksheet is used to sum the total tons of actual emissions subject to fees, adjust for double counting of emissions, perform certain reconciliations for underpayment and overpayment of fees and adjust for fee assessment errors, if needed, and ultimately to determine the total fee to be paid.

A detailed explanation of Section F follows (separated into six parts):

Emissions Summary

The subtotals for each pollutant listed in Sections D and E (or from form **EMISS**) are added together to calculate the total emissions (in tons per year) for the facility.

The emissions that are reported here will vary for initial fee payment purposes, depending on the specific circumstances, but will always be actual emissions for the preceding calendar year for annual fee purposes. See the instructions for section D for more on the emissions data you should use in the part of the form.

The total emissions are adjusted for double counting and are rounded to the nearest ton. For example, double counting may occur where a pollutant is defined as HAP and VOC. If you adjust for double counting, attach an explanation for this.

Reconciliation (When Initial Emission Fees Were Based on Estimates for the Current Calendar Year)

This section is only used by sources paying their first annual fee when their initial fee was based on estimates of calendar-year emissions for the "current" year (the same year that initial fees were paid). This reconciliation is done by comparing the actual emissions for the "current" year provided in sections D and E of this submittal with the estimate of those emissions previously provided with initial fee payment. There may have been overpayment or underpayment of the initial fee. The fee you are paying now will be adjusted for this difference later.

Reconciliation (When Initial Emission Fees Were Based on Estimates for the Preceding Calendar Year)

This section is only used by sources paying their first annual fee when their initial fee was based on estimates of calendar-year emissions for the year preceding initial fee payment, provided the source was required to pay its initial fee between January 1 and March 31, and EPA issued the Part 71permit to replace a Part 70 permit. This reconciliation is done by comparing the actual emissions for the "preceding" year provided in sections D and E of this submittal with the estimate of those emissions provided with initial fee payment. There may have been overpayment or underpayment of the initial fee. The fee you are paying now will be adjusted for this difference later.

Emission Fee Calculation

Calculate the emission-based fee using the emissions from line 5 (tons) multiplied by the fee rate ($/ton) in effect at the time the fee is paid.

GHG Fee Adjustment

The part 71 rule was amended in 2015 to require the fees to be increased by a GHG fee adjustment. The GHG adjustment must be calculated by each source that is required to pay fees. The adjustment is based on the burden for the permitting authority to conduct certain GHG evaluations or reviews related to the source, rather than on emissions. Set fees are charged for certain activities that have occurred at the source since the last time fees were paid. For an initial application, the set fee is a one-time charge that includes the costs of processing application updates. The term "permit modification" refers to any significant and minor modifications, but not to administrative amendments. The number of permit modifications must be multiplied by the set fee for modifications to determine the total GHG adjustment for modifications. The set fee for a permit renewal also includes any permit modifications that may be processed at the same time as the renewal. Note that you may need to check with the permitting authority to determine if they are holding any permit modification requests you have submitted for processing with an upcoming permit renewal.

Other Adjustments

The purpose of this section is to adjust the emissions-based to determine the total fee (after adjustments) that is due to the EPA. The emissions fee determined on line 21 is adjusted by the GHG fee adjustment, any amounts of overpayment or underpayment related to a previous fee submittal, and to correct for any fee assessment errors.

Fee assessment errors occur when the permitting authority determines that the source has calculated the fee incorrectly. If this occurs, you will be notified of the error. Any overpayment will be credited against the next fee owed. In the case of underpayment, you will be billed for the corrected fee and you will have 30 days to remit the amount. If you think the assessed fee is in error, you may submit a written explanation of the alleged error, but you must pay the fee. The permitting authority will provide a determination in 90 days. If the assessment of underpayment is in error, your account will be credited.

Fee Payment

See form **FF** (the Fee Filing form) for instructions on how to make fee payment to the EPA.

Penalties and Interest

The permitting authority will bill sources for appropriate penalties and interest for late payment or excessive underpayment of fees. Interest will be assessed on payments received later than the due date. Penalties shall be assessed if payment is not paid within 30 days of the due date. For sources issued with issued permits, penalties and interest shall be assessed for excessive underpayment of the annual fee amount.

END

Harvest Midstream Company

P.O. Box 61229
Houston TX 77208-1229

Owner:	1070478	Check Date:	07/16/2019	Check Number:	0062048394

Invoice #	Inv. Date	Description	Amount	Discount	Net Amount
070119	7/1/2019	PERMIT R6FOP-NM-04-R2 LOS MESTENIOS	$3,807.60	$0.00	$3,807.60

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Check No	Check Date	Check Amount
0062048394	7/16/2019	********$3,807.60

PAY *Three Thousand Eight Hundred Seven Dollars and Sixty Cents*

TO THE ORDER OF
US ENVIRONMENTAL PROTECTION AGENCY
GOVERNMENT LOCKBOX 979078
1005 CONVENTIONAL PLAZA

ST LOUIS MO 63101

Colleen Elkins

Authorized Signature

⑈0062048394⑈ ⑆113011258⑆ 53267652⑈

ORIGIN ID:FMNA (505) 634-4316
TRISTEN RUYBALID
HARVEST FOUR CORNERS, LLC
1755 ARROYO DRIVE

BLOOMFIELD, NM 87413
UNITED STATES US

SHIP DATE: 19JUL19
ACTWGT: 0.50 LB
CAD: 113465079/INET4160

BILL SENDER

TO AIR & RADIATION DIV/AIR PERMITS SEC
US EPA REGION-6, ARPE
1201 ELM STREET
SUITE 500
DALLAS TX 75270
(000) 000-0000 REF:
INV:
PO: DEPT:

567J2/A6F9/05A2

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TX-US DFW

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Tristen Ruybalid

From:	TrackingUpdates@fedex.com
Sent:	Monday, July 22, 2019 9:05 AM
To:	Tristen Ruybalid
Subject:	[EXTERNAL] FedEx Shipment 775789272381 Delivered

Your package has been delivered

Tracking # 775789272381

Ship date:
Fri, 7/19/2019

Tristen Ruybalid
Harvest Four Corners, LLC
Bloomfield, NM 87413
US

Delivered

Delivery date:
Mon, 7/22/2019 9:57 am

Air & Radiation Div/Air Permits Sec
US EPA Region-6, ARPE
1201 Elm Street
Suite 500
DALLAS, TX 75270
US

Personalized Message

E&H Receiver & Los Mestenios TV Part 71 Annual Fees

Shipment Facts

Our records indicate that the following package has been delivered.

Tracking number:	775789272381
Status:	Delivered: 07/22/2019 09:57 AM Signed for By: G.GRIBBS
Signed for by:	G.GRIBBS
Delivery location:	DALLAS, TX
Delivered to:	Guard/Security Station
Service type:	FedEx Standard Overnight®
Packaging type:	FedEx® Envelope
Number of pieces:	1
Weight:	0.50 lb.

Special handling/Services:	Deliver Weekday
Standard transit:	7/22/2019 by 3:00 pm

This tracking update has been requested by:

Company name:	Harvest Four Corners, LLC
Name:	Tristen Ruybalid
Email:	truybalid@harvestmidstream.com

Please do not respond to this message. This email was sent from an unattended mailbox. This report was generated at approximately 10:04 AM CDT on 07/22/2019.

All weights are estimated.

To track the latest status of your shipment, click on the tracking number above.

This tracking update has been sent to you by FedEx on behalf of the Requestor truybalid@harvestmidstream.com. FedEx does not validate the authenticity of the requestor and does not validate, guarantee or warrant the authenticity of the request, the requestor's message, or the accuracy of this tracking update.

Standard transit is the date and time the package is scheduled to be delivered by, based on the selected service, destination and ship date. Limitations and exceptions may apply. Please see the FedEx Service Guide for terms and conditions of service, including the FedEx Money-Back Guarantee, or contact your FedEx Customer Support representative.

Thank you for your business.

HARVEST MIDSTREAM

1755 Arroyo Drive
Bloomfield, NM 87413
Phone 505-632-4600
Fax 505-632-4682
harvestmidstream.com

July 17, 2019

U.S. Bank
Government Lockbox 979078
US EPA FOIA & Misc. Payments
1005 Convention Plaza
SL-MO-C2-GL
St. Louis, MO 63101

re: Title V Part 71 Annual Fee - 2018
Permit R6FOP-NM-04-R2 – Los Mestenios Compressor Station

Dear Madam/Sir,

In accordance with condition 5.1 of the Part 71 operating permit number R6FOP-NM-04-R2 for Harvest Four Corners LLC's Los Mestenios Compressor Station, please find enclosed the Form FEE – Fee Calculation Worksheet for pollutants emitted during the calendar year 2018, and Form FF for the filing of payment for these emissions. Also enclosed is check number 0062048394 in the amount of $3,807.60 for the annual permit fee for operations during calendar year 2018.

If you have any questions, please call me at (505) 632-4625 or Bobby Myers of Cirrus Consulting at (801) 484-4412.

Sincerely,

Monica Smith

Monica Smith
Environmental Specialist

Attachments

United States Environmental Protection Agency

OMB No. 2060-0336,
Approval Expires 05/31/2019

Federal Operating Permit Program (40 CFR Part 71)
FEE FILING FORM (FF)

The purpose of this form is to ensure that fee payments made by check are credited to the proper facility and to the proper government account. Send this form, along with form **FEE** and the check, to the appropriate lockbox bank address listed on the following page. This form is required whenever you pay by check, including for initial and annual fee payments. Part 71 fees may be paid by check or electronically, and further information on making payments by check or electronically is provided on the following page.

Source or Facility Name _Harvest Four Corners, LLC's Los Mestenios Compressor Station__

Source Location _Rio Arriba County, New Mexico

EPA Region where Source Located Region 6

Mailing Address:

Street/P.O. Box 1755 Arroyo Drive

City_Bloomfield

State _NM ZIP _87413 -

Contact Person: Monica Smith

Title_ Environmental Specialist

Telephone (505) 632 - 4625 Ext.

Total Fee Payment Remitted: $ 3807.60

Harvest Midstream Company

P.O. Box 61229
Houston TX 77208-1229

Owner:	1070478	Check Date:	07/16/2019	Check Number:	0062048394

Invoice #	Inv. Date	Description	Amount	Discount	Net Amount
070119	7/1/2019	PERMIT R6FOP-NM-04-R2 LOS MESTENIOS	$3,807.60	$0.00	$3,807.60

PLEASE DETATCH AT PERFORATION BELOW

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Harvest Midstream Company
P.O. Box 61229
Houston TX 77208-1229

AMEGY BANK

32-1125
1130

Void After 90 Days

Check No	Check Date	Check Amount
0062048394	7/16/2019	********$3,807.60

PAY *Three Thousand Eight Hundred Seven Dollars and Sixty Cents*

TO THE ORDER OF

US ENVIRONMENTAL PROTECTION AGENCY
GOVERNMENT LOCKBOX 979078
1005 CONVENTIONAL PLAZA

ST LOUIS MO 63101

Colleen Elkins

Authorized Signature

⑈0062048394⑈ ⑆113011258⑆ 5326765 2⑈

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	Padlock Security box appears blurred if copied or scanned.
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Fluorescent Fibers:	Invisible unless exposed to ultraviolet light
Visible Fibers:	Absence of visible red and/or blue fibers may indicate alteration.
Fourdrinier Watermark:	True watermark visible from both sides, absence indicates alteration.

ORIGIN ID:FMNA (505) 634-4316
TRISTEN RUYBALID
HARVEST FOUR CORNERS, LLC
1755 ARROYO DRIVE

BLOOMFIELD, NM 87413
UNITED STATES US

SHIP DATE: 19JUL19
ACTWGT: 0.50 LB
CAD: 113465079/INET4160

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TO **US EPA FOIA & MISC. PAYMENTS**
U.S. BANK GOVERNMENT LOCKBOX 979078
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SL-MO-C2-GL
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(000) 000-0000 REF:
INV:
PO: DEPT:

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MON - 22 JUL 3:00P
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XX CPSA

63101
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Tristen Ruybalid

From:	TrackingUpdates@fedex.com
Sent:	Monday, July 22, 2019 8:48 AM
To:	Tristen Ruybalid
Subject:	[EXTERNAL] FedEx Shipment 775789389791 Delivered

Your package has been delivered

Tracking # 775789389791

Ship date:
Fri, 7/19/2019

Tristen Ruybalid
Harvest Four Corners, LLC
Bloomfield, NM 87413
US

Delivered

Delivery date:
Mon, 7/22/2019 9:40 am

US EPA FOIA & Misc. Payments
U.S. Bank Government
Lockbox 979078
1005 Convention Plaza
SL-MO-C2-GL
SAINT LOUIS, MO 63101
US

Personalized Message

Los Mestenios TV Part 71 Annual Fee Payment

Shipment Facts

Our records indicate that the following package has been delivered.

Tracking number:	775789389791
Status:	Delivered: 07/22/2019 09:40 AM Signed for By: P.PATTERSON
Signed for by:	P.PATTERSON
Delivery location:	ST. LOUIS, MO
Delivered to:	Mailroom
Service type:	FedEx Standard Overnight®
Packaging type:	FedEx® Envelope

Number of pieces:	1
Weight:	0.50 lb.
Special handling/Services:	Deliver Weekday
Standard transit:	7/22/2019 by 3:00 pm

This tracking update has been requested by:

Company name:	Harvest Four Corners, LLC
Name:	Tristen Ruybalid
Email:	truybalid@harvestmidstream.com

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Thank you for your business.

HARVEST MIDSTREAM

1755 Arroyo Drive
Bloomfield, NM 87413
Phone 505-632-4600
Fax 505-632-4682
harvestmidstream.com

March 12, 2020

U.S. EPA, Region 6
Air and Radiation Division Air Permits Section (ARPE)
1201 Elm Street, Suite 500
Dallas, TX 75270

re: Title V Part 71 Annual Fee Form FEE - 2019
Permit R6FOP-NM-04-R2 – Los Mestenios Compressor Station

Dear Madam/Sir,

In accordance with condition 4.15 of the Part 71 operating permit number R6FOP-NM-04-R2 for Harvest Four Corners LLC's Los Mestenios Compressor Station, please find enclosed the Form FEE – Fee Calculation Worksheet, for the quantification for pollutants emitted during the calendar year 2019. Also enclosed is a photocopy of check number 0062053521-in the amount of $2,071.69 for the annual operating permit fee.

If you have any questions, please call me at (505) 632-4625 or Bobby Myers of Cirrus Consulting at (801) 484-4412.

Sincerely,

Monica Smith

Monica Smith
Environmental Specialist

Attachments

United States Environmental Protection Agency

OMB No. 2060-0336, Expires 11/30/2022

Federal Operating Permit Program (40 CFR Part 71)
FEE CALCULATION WORKSHEET (FEE)

Use this form initially, or thereafter on an annual basis, to calculate part 71 fees.

A. General Information

Type of fee (Check one): ___Initial _x_ Annual

Deadline for submitting fee calculation worksheet _04_/_01_/_2020_

For initial fees, emissions are based on (Check one):

_x_ Actual emissions for the preceding calendar year. (Required in most circumstances.)

___ Estimates of actual emissions for the current calendar year. (Required when operations commenced during the preceding calendar year.)

Date commenced operations ____/____/______

___ Estimates of actual emissions for the preceding calendar year. (Optional after a part 71 permit was issued to replace a part 70 permit, but only if initial fee payment is due between January 1 and March 31; otherwise use actual emissions for the preceding calendar year.)

For annual fee payment, you are required to use actual emissions for the preceding calendar year.

B. Source Information: Complete this section only if you are paying fees but not applying for a permit.

Source or facility name _Harvest Four Corners, LLC's Los Mestenios Compressor Station_________

Mailing address: Street or P.O. Box _1755 Arroyo Drive_________________________________

City: _Bloomfield____________________________ State: _NM_____ ZIP_87413__________ - ______

Contact person: _Monica Smith______________ Title: _Environmental Specialist_______________

Telephone (_505_) _632_ - _4625__ Ext____ Part 71 permit no. _R6FOP-NM-04-R2_________

C. Certification of Truth, Accuracy and Completeness: Only needed if not submitting a separate form CTAC.

I certify under penalty of law, based on information and belief formed after reasonable inquiry, the statements and information contained in this submittal (form and attachments) are true, accurate and complete.

Name (signed) ________________________________

Name (typed) _ Travis Jones________________________________ Date: 3 / 3 /2020

EPA Form 5900-03

D. Annual Emissions Report for Fee Calculation Purposes -- Non-HAP

You may use this to report actual emissions (tons per year) of regulated pollutants (for fee calculation) on a calendar-year basis for both initial and annual fee calculation purposes. Section E is designed to report HAP emissions. Quantify all actual emissions, including fugitives, but do not include insignificant emissions and certain regulated air pollutants that are not counted for fee purposes, such as CO and GHGs (see instructions). Sum the emissions in each column to calculate subtotals. Subtotals should be reported to the nearest tenth (0.1) of a ton at the bottom of the page. If any subtotal exceeds 4,000 tons, enter 4,000 for that column.

This data is for _2019_ (year)

Emission Unit ID	NOx	VOC	SO2	PM10	Lead	Other
1	14.8	0.4				
2	0.0	0.0				
Tk-1		19.3				
F-1		0.5				
		3.5				
SUBTOTALS:	14.8	23.7				

E. Annual Emissions Report for Fee Calculation Purposes -- HAP

HAP Identification. Identify individual HAP emitted at the facility, identify the CAS number, and assign a unique identifier for use in the second table in this section. Whenever assigning identifier codes, use "HAP1" for the first, "HAP2" for the second, and so on.

Name of HAP	CAS No	Identifier
Acetaldehyde	75-07-0	HAP _1_
Formaldehyde	50-00-0	HAP _2_
Benzene	71-43-2	HAP _3_
Toluene	108-88-3	HAP _4_
Ethylbenzene	100-41-4	HAP _5_
Xylenes	1330-20-7	HAP _6_
n-Hexane	110-54-3	HAP _7_

HAP Emissions. Report the actual emissions of individual HAP identified above. Use the identifiers assigned in the table above. Include all emissions, including fugitives, and do not include insignificant emissions. Sum the emissions in each column to calculate subtotals. Report subtotals to the nearest tenth (0.1) of a ton at the bottom of the page. If any subtotal exceeds 4,000 tons, enter 4,000.

This data is for _2019_ (year)

Emissions Unit ID	Actual Emissions (Tons/Year)							
	HAP_1_	HAP_2_	HAP_3_	HAP_4_	HAP_5_	HAP_6_	HAP_7_	HAP___
1	0.2	0.3						
2	0.0	0.0						
Tk-1			0.1	0.1	0	0	1.4	
F-1							0.1	
SUBTOTALS:	0.2	0.3	0.1	0.1	0	0	1.5	2.2

F. Fee Calculation Worksheet

This worksheet is used to calculate the total fee owed (including the emissions-based fee and the GHG fee adjustment) for both initial and annual fee payment purposes. Reconciliation is only for cases where you are paying the annual fee and you used any type of estimate of actual emissions when you calculated the initial fee. If you do not need to reconcile fees, complete line 1-5 (emissions summary) and then skip down to line 21 (emission calculation). See instructions for more detailed explanation.

EMISSIONS SUMMARY

1. Sum the subtotals from section D of this form (non-HAP) and enter the total, rounded to the nearest tenth (0.1) of a ton.	38.5
2. Sum the subtotals from section E of this form (HAP) and enter the total, rounded to the nearest tenth (0.1) of a ton.	2.1
3. Sum lines 1 and 2.	40.6
4. Enter the emissions that were counted twice. If none, enter "0."	2.1
5. Subtract line 4 from line 3, round to the nearest ton, and enter the result here. This is the **total emissions** that count for fees purposes.	38.5

RECONCILIATION (WHEN INITIAL FEES WERE BASED ON ESTIMATES FOR THE "CURRENT" CALENDAR YEAR)

Only complete lines 6-10 if you are paying the first annual fee and initial fees were based on estimated actual emissions for the calendar year in which you paid initial fees; otherwise skip to line 11 or to line 21.

6. Enter the total estimated actual emissions for the year the initial fee was paid (previously reported on line 5 of the initial fee form).	
7. If line 5 is greater than line 6, subtract line 6 from line 5, and enter the result. Otherwise enter "0."	
8. If line 6 is greater than line 5, subtract line 5 from line 6, and enter the result. Otherwise enter "0."	
9. If line 7 is greater than 0, multiply line 7 by last year's fee rate ($/ton) and enter the result here. This is the underpayment. Go to line 21.	
10. If line 8 is greater than 0, multiply line 8 by last year's fee rate ($/ton) and enter the result here. This is the overpayment. Go to line 21.	

RECONCILIATION (WHEN INITIAL FEES WERE BASED ON ESTIMATES FOR THE "PRECEDING" CALENDAR YEAR)	
Only complete lines 11-20 if you are paying the first annual fee and initial fees were based on estimated actual emissions for the calendar year preceding initial fee payment; otherwise skip to line 21. If completing this section, you will also need to complete sections D and E to report actual emissions for the calendar year preceding initial fee payment.	
11. Sum the actual emissions from section D (non-HAP) for the calendar year preceding initial fee payment and enter the result here.	
12. Sum the actual emissions from section E (HAP) for the calendar year preceding initial fee payment and enter the result here.	
13. Add lines 11 and 12 and enter the total here. These are total actual emissions for the calendar year preceding initial fee payment.	
14. Enter double counted emission from line 13 here. If none, enter "0."	
15. Subtract line 14 from line 13, round to the nearest ton, and enter the result here.	
16. Enter the total estimated actual emissions previously reported on line 5 of the initial fee form. These are estimated actual emissions for the calendar year preceding initial fee payment.	
17. If line 15 is greater than line 16, subtract line 16 from line 15, and enter the result here. Otherwise enter "0."	
18. If line 16 is greater than line 15, subtract line 15 from line 16, and enter the result here. Otherwise enter "0."	
19. If line 17 is greater than 0, multiply line 17 by last year's fee rate ($/ton) and enter the result here. This is the underpayment.	
20. If line 18 is greater than 0, multiply line 18 by last year's fee rate ($/ton) and enter the result on this line. This is the overpayment.	
EMISSION FEE CALCULATION	
21. Multiply line 5 (tons) by the current fee rate ($/ton) and enter the result here. This is the unadjusted emissions fee. Continue on to line 23.	$2071.69
GHG FEE ADJUSTMENT	
22. If you are submitting an initial permit application and this is the first time you are paying fees, enter $2,236, otherwise enter "0". [Note that any updates to the initial application are covered under this one-time charge.]	0
23. Enter the number of permit modifications (or related permit actions) you have submitted to the permitting authority since you last paid fees. If none, skip to line 25.	0
24. Multiply the number in line 23 by $365 and enter the result.	0

25. If you have submitted a permit renewal application since the last time you paid fees enter $520, otherwise enter "0"	0
26. Sum line 22, 24, and 25 and enter the result. This is the GHG fee adjustment	0
OTHER ADJUSTMENTS	
27. Add the total on line 21 and the total on line 26 and enter the result.	$2071.69
28. Enter any underpayment from line 9 or 19 here. Otherwise enter "0."	0
29. Enter any overpayment from line 10 or 20 here. Otherwise enter "0."	0
30. If line 28 is greater than "0," add it to line 27 and enter the result here. If line 29 is greater than "0," subtract this from line 27 and enter the result here. Otherwise enter the amount on line 27 here. This is the fee adjusted for over/underpayment.	$2071.69
31. Enter any credit for fee assessment error here. Otherwise, enter "0."	0
32. Subtract line 31 from line 30 and enter the result here. Stop here. This is the **TOTAL FEE (AFTER ADJUSTMENTS)** that you must remit to EPA.	$2071.69

INSTRUCTIONS FOR FEE
FEE CALCULATION WORKSHEET

Information Collection Burden Estimates

The public reporting and recordkeeping burden for this collection of information is estimated to average 247 hours per respondent per year. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

DETAILED INSTRUCTIONS

Use this form to initially or annually calculate fees. This form is for paying fees to EPA or a delegate agency (such as a State or tribe) under a part 71 operating permit program. The requirements for paying fees under part 71 programs, as well as the forms and instructions contained herein, are based on the requirements of 40 CFR 71.9

There may be cases, under a part 71 program, when you are not required to complete this form or pay the EPA fee rate (where the part 71 program has been delegated and EPA's fee has been suspended because EPA incurs no administrative costs). In such cases, the delegate agency will instruct you on how to calculate fees and how to pay them. If in doubt, contact your permitting authority.

General Rules for Fee Calculation under Part 71:

- Use the fee rate in effect at the time you pay the fee regardless of the time period that the emissions data represents. For example, if the annual fee for the current year is due July 1, you would use the fee rate in effect for the current year and the actual emissions for the previous calendar year.
- Do not prorate initial or annual fees. Pay full fees for the entire calendar year regardless of how many days you operated or were subject to the program during the previous or current year.
- Do not hesitate to contact the permitting authority if you have any doubt about how to calculate fees, especially if you have an unusual set of circumstances not addressed specifically by these forms or whenever the permit requirements appear to conflict with these forms (however, always assume the permit requirements take precedence in such cases).

Section A. General Information

The deadline for submitting the fee form and paying the fee for initial fee payment purposes for most sources is the same deadline as for submitting all other forms required for the initial permit application. Other deadlines apply for initial fee payment in certain limited circumstances:

- When a source is subject to part 71 because of an unresolved EPA objection to a part 70 permit, fees are not due with the part 71 application, but are due 3 months following the date of the issuance of the part 71 permit.
- When EPA withdraws approval of a part 70 program and implements a part 71 programs, fees are submitted according to a schedule based on the source's SIC code (within 6 to 9 months of the effective date of the part 71 program).

The deadline for submitting the fee form and paying the fee for annual fee payment purposes is the anniversary date of initial fee payment. This is required whether or not a permit has been issued. If you were required to pay initial fees between January 1 and March 31, the regulations allow for submittal of annual fees no later than April 1.

Whether you are paying initial or annual fees see the instructions for sections D and E for more information on which calendar-year emission data to use (preceding or current year) and how to quantify such emissions (actual emissions or estimates of actual emissions).

Section B. Source Information

Complete this section only if you are preparing this form for submittal at a different time than for the other portions of an initial application or for annual fee purposes.

Section C. Certification of Truth, Accuracy and Completeness

This form and any other document required by a permit must be signed by a responsible official certifying truth, accuracy and completeness of the information. If you are submitting a separate **CTAC** form, there is no need to complete this section of the form. If you complete this section, there is no need to submit form **CTAC** separately.

Section D. Annual Emissions Report for Fee Calculation Purposes – Non-HAP

Calculate actual emissions of regulated pollutants (for fee calculation), except for HAP, on a calendar-year basis for the facility in this section. Section E is provided to report actual emissions of HAP. Note the phrase "regulated pollutant (for fee calculation)" is any "regulated air pollutant" except carbon monoxide (CO), and pollutants regulated solely because they are: 1) subject to regulation under section 112(r) of the Act, or 2) a class I or II substance under title VI of the Act. **Note that GHG emissions are not counted for fee purposes.**

If more than one year of data is being submitted with the fee calculation worksheet, copy this page and complete a separate table for each year. If you are submitting an initial application, you may use emissions data already reported on form **EMISS**, provided this is the same data you would otherwise report in sections D and E of this form. If using **EMISS** in this manner, please note this on the fee calculation form. Also, sources must submit attachments to this form to show (at a minimum) examples of the calculations used to determine these values.

Show actual emissions for each listed air pollutant for each emission unit. Values should be reported to the nearest tenth (0.1) of a ton.

The column for "other" is for other regulated pollutants (for fee calculation) not already listed on the form. Write in the name of the pollutant in the proximity of the "other" column. If more than one such pollutant, show the pollutants, and the totals on an attachment.

Actual emissions must be calculated using actual operating hours, production rates, in-place control equipment, and types of materials processed, stored, or combusted over the preceding calendar year. Sources that have been issued title V permits are required to compute actual emissions using compliance methods required by the permits, such as monitoring or source testing data. If this is not possible, actual emissions should be determined using other federally recognized procedures.

For initial fee calculation purposes, most sources are required to use actual emissions for the preceding calendar year. However, there are certain exceptions where estimates of actual emissions are either required or allowed in place of actual emissions for the preceding calendar year (see table below):

Exception	Emission Data
When the source commenced operation during the preceding calendar year.	Estimates of actual emissions for the "current" calendar year are required
When EPA withdraws approval of a part 70 program and implements a part 71 program, and the source pays initial part 71 fees between January 1 and March	Either estimates of actual emissions for the "preceding" calendar year or actual emissions for the preceding calendar year may be used.
When a part 71 permit was issued following an unresolved objection to a part 70 permit, and the source is required to pay initial part 71 fees between January 1 and March 31.	Either estimates of actual emissions for the "preceding" calendar year or actual emissions for the preceding calendar year may be used.

For annual fee purposes, fee calculation should be based on actual emissions for the preceding calendar year in all cases.

In most cases you will only need to report one set of emission data using sections D and E of this form (the data that is the basis of the initial or annual fee being paid as explained above). This data is subsequently carried over to lines 1 and 2 of section F (Fee Calculation Worksheet) of the form.

However, there is one exception where you would be required to report two different sets of emissions data using sections D and E – when paying the first annual fee and reconciliation is required because the initial fee was based on estimated actual emissions for the "preceding" calendar year (the year preceding initial fee payment). In this case, the two data sets would be:

- actual emissions for the year initial fees paid (for annual fee purposes in lines 1-5 of section F of the form), and
- actual emissions for the year preceding initial fee payment (for reconciliation in lines 11-20 of the form)

Whenever reconciliation is required as part of annual fee payment, you will also need a copy of the fee forms you previously submitted with initial fee payment in order to obtain the value of estimated actual emissions.

Include all fugitive emissions in the calculation of actual emissions, including those that do not count for applicability. Do not include any insignificant emissions identified on form **IE**.

The subtotal line in section D of the form is provided at the bottom of each column to enter total emissions for each pollutant reported above. Each subtotal should be reported to the nearest tenth (0.1) of a ton. If any subtotal exceeds 4,000 tons, enter 4,000 tons for that column.

Any necessary adjustments for double counting of emissions will be performed later in section F.

Section E. Annual Emissions Report for Fee Calculation Purposes -- HAP

List the actual emissions of individual HAP from each emission unit. If you are initially applying for a permit, you may use the emissions of HAP reported on form **EMISS,** instead of completing this section of this form, provided these emissions are the same as you would otherwise report using this section of the form. If you are doing this, please note it on the form.

This section is composed of two tables. The first table is to identify individual HAP emitted at each emission unit. Assign a unique identifier for use in the second table. Please use "HAP1" for the first

one, "HAP2" for the second one, and so on. The second table is to calculate the actual emission of individual HAP at each emission unit. Use the identifiers assigned in the first table to label the column headers for the second table. You may round and report these emissions to the nearest tenth (0.1) of a ton. Sum the values in each column and enter the subtotals at the bottom of the table. If any subtotal exceeds 4,000 tons, enter 4,000 for that column.

See instructions for section D for more information on reporting emissions data.

Section F. Fee Calculation Worksheet

This worksheet is used to sum the total tons of actual emissions subject to fees, adjust for double counting of emissions, perform certain reconciliations for underpayment and overpayment of fees and adjust for fee assessment errors, if needed, and ultimately to determine the total fee to be paid.

A detailed explanation of Section F follows (separated into six parts):

Emissions Summary

The subtotals for each pollutant listed in Sections D and E (or from form **EMISS**) are added together to calculate the total emissions (in tons per year) for the facility.

The emissions that are reported here will vary for initial fee payment purposes, depending on the specific circumstances, but will always be actual emissions for the preceding calendar year for annual fee purposes. See the instructions for section D for more on the emissions data you should use in the part of the form.

The total emissions are adjusted for double counting and are rounded to the nearest ton. For example, double counting may occur where a pollutant is defined as HAP and VOC. If you adjust for double counting, attach an explanation for this.

Reconciliation (When Initial Emission Fees Were Based on Estimates for the Current Calendar Year)

This section is only used by sources paying their first annual fee when their initial fee was based on estimates of calendar-year emissions for the "current" year (the same year that initial fees were paid). This reconciliation is done by comparing the actual emissions for the "current" year provided in sections D and E of this submittal with the estimate of those emissions previously provided with initial fee payment. There may have been overpayment or underpayment of the initial fee. The fee you are paying now will be adjusted for this difference later.

Reconciliation (When Initial Emission Fees Were Based on Estimates for the Preceding Calendar Year)

This section is only used by sources paying their first annual fee when their initial fee was based on estimates of calendar-year emissions for the year preceding initial fee payment, provided the source was required to pay its initial fee between January 1 and March 31, and EPA issued the Part 71permit to replace a Part 70 permit. This reconciliation is done by comparing the actual emissions for the "preceding" year provided in sections D and E of this submittal with the estimate of those emissions provided with initial fee payment. There may have been overpayment or underpayment of the initial fee. The fee you are paying now will be adjusted for this difference later.

Emission Fee Calculation

Calculate the emission-based fee using the emissions from line 5 (tons) multiplied by the fee rate ($/ton) in effect at the time the fee is paid.

GHG Fee Adjustment

The part 71 rule was amended in 2015 to require the fees to be increased by a GHG fee adjustment. The GHG adjustment must be calculated by each source that is required to pay fees. The adjustment is based on the burden for the permitting authority to conduct certain GHG evaluations or reviews related to the source, rather than on emissions. Set fees are charged for certain activities that have occurred at the source since the last time fees were paid. For an initial application, the set fee is a one-time charge that includes the costs of processing application updates. The term "permit modification" refers to any significant and minor modifications, but not to administrative amendments. The number of permit modifications must be multiplied by the set fee for modifications to determine the total GHG adjustment for modifications. The set fee for a permit renewal also includes any permit modifications that may be processed at the same time as the renewal. Note that you may need to check with the permitting authority to determine if they are holding any permit modification requests you have submitted for processing with an upcoming permit renewal.

Other Adjustments

The purpose of this section is to adjust the emissions-based to determine the total fee (after adjustments) that is due to the EPA. The emissions fee determined on line 21 is adjusted by the GHG fee adjustment, any amounts of overpayment or underpayment related to a previous fee submittal, and to correct for any fee assessment errors.

Fee assessment errors occur when the permitting authority determines that the source has calculated the fee incorrectly. If this occurs, you will be notified of the error. Any overpayment will be credited against the next fee owed. In the case of underpayment, you will be billed for the corrected fee and you will have 30 days to remit the amount. If you think the assessed fee is in error, you may submit a written explanation of the alleged error, but you must pay the fee. The permitting authority will provide a determination in 90 days. If the assessment of underpayment is in error, your account will be credited.

Fee Payment

See form **FF** (the Fee Filing form) for instructions on how to make fee payment to the EPA.

Penalties and Interest

The permitting authority will bill sources for appropriate penalties and interest for late payment or excessive underpayment of fees. Interest will be assessed on payments received later than the due date. Penalties shall be assessed if payment is not paid within 30 days of the due date. For sources issued with issued permits, penalties and interest shall be assessed for excessive underpayment of the annual fee amount.

END

Harvest Midstream Company

P.O. Box 61229
Houston TX 77208-1229

Owner:	1070478	Check Date:	03/10/2020	Check Number:	0062053521

Invoice #	Inv. Date	Description	Amount	Discount	Net Amount
030420	3/4/2020	PART 71 FEE PAYMENT LOS MESTENIOS	$2,071.69	$0.00	$2,071.69

PLEASE DETATCH AT PERFORATION BELOW

PLEASE DETATCH AT PERFORATION BELOW

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Harvest Midstream Company
P.O. Box 61229
Houston TX 77208-1229

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32-1125
1130

Void After 90 Days

Check No	Check Date	Check Amount
0062053521	3/10/2020	********$2,071.69

PAY *Two Thousand Seventy-One Dollars and Sixty-Nine Cents*

TO THE ORDER OF
US ENVIRONMENTAL PROTECTION AGENCY
1300 PENNSYLVANIA AVE NW
MAIL CODE 2733R
WASHINGTON DC 20004

Colleen Elkins

Authorized Signature

⑈0062053521⑈ ⑆113011258⑆ 53267652⑈

ORIGIN ID:FMNA (505) 634-4316
TRISTEN RUYBALID
HARVEST FOUR CORNERS, LLC
1755 ARROYO DRIVE

BLOOMFIELD, NM 87413
UNITED STATES US

SHIP DATE: 13MAR20
ACTWGT: 0.50 LB
CAD: 113465079/INET4220

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TO AIR & RADIATION DIVAIR PERMITS SEC
US EPA REGION-6, ARPE
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SUITE 500
DALLAS TX 75270

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Kayleigh Ruybalid

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Sent:	Monday, March 16, 2020 8:30 AM
To:	Kayleigh Ruybalid
Subject:	[EXTERNAL] FedEx Shipment 770014813357 Delivered

Your package has been delivered

Tracking # 770014813357

Ship date:
Fri, 3/13/2020

Tristen Ruybalid
Harvest Four Corners, LLC
Bloomfield, NM 87413
US

Delivered

Delivery date:
Mon, 3/16/2020 9:25 am

Air & Radiation DivAir Permits Sec
US EPA Region-6, ARPE
1201 Elm Street
Suite 500
DALLAS, TX 75270
US

Personalized Message

Los Mestenios TV Part 71 Annual Fee Form FEE 2019

Shipment Facts

Our records indicate that the following package has been delivered.

Tracking number:	770014813357
Status:	Delivered: 03/16/2020 09:25 AM Signed for By: S.MARTINEZ
Signed for by:	S.MARTINEZ
Delivery location:	DALLAS, TX
Delivered to:	Guard/Security Station
Service type:	FedEx Standard Overnight®
Packaging type:	FedEx® Envelope
Number of pieces:	1

Weight:	0.50 lb.
Special handling/Services:	Deliver Weekday
Standard transit:	3/16/2020 by 3:00 pm

This tracking update has been requested by:

Company name:	Harvest Four Corners, LLC
Name:	Tristen Ruybalid
Email:	truybalid@harvestmidstream.com

Please do not respond to this message. This email was sent from an unattended mailbox. This report was generated at approximately 9:29 AM CDT on 03/16/2020.

All weights are estimated.

To track the latest status of your shipment, click on the tracking number above.

This tracking update has been sent to you by FedEx on behalf of the Requestor truybalid@harvestmidstream.com. FedEx does not validate the authenticity of the requestor and does not validate, guarantee or warrant the authenticity of the request, the requestor's message, or the accuracy of this tracking update.

Standard transit is the date and time the package is scheduled to be delivered by, based on the selected service, destination and ship date. Limitations and exceptions may apply. Please see the FedEx Service Guide for terms and conditions of service, including the FedEx Money-Back Guarantee, or contact your FedEx Customer Support representative.

Thank you for your business.

Kayleigh Ruybalid

From:	Collier, Laura <collier.laura@epa.gov>
Sent:	Friday, November 6, 2020 8:40 AM
To:	Kayleigh Ruybalid; Church, Stacey
Cc:	Monica Smith
Subject:	[EXTERNAL] RE: Part 71 Fee Expired Check

Hello Kayleigh,

Please resubmit the check to the Cincinnati Finance Center (CFC) address below. Since our office has been teleworking due to the pandemic, initially we had not been receiving mail and were not able to process check payments. We have put interim procedures in place to have the CFC process checks for FCB. We apologize for any inconvenience you have experienced.

US EPA
Cincinnati Finance Center
1005 Convention Plaza
Lockbox #979078
St. Louis, MO 63101

Thank you

Laura Collier
Lead Accountant
Fees and Collections Branch
Phone: 202-564-7593
USEPA/OCFO/OC/ACAD/FCB
OC SharePoint

***********Privacy Act Notice************
Information contained in this message may be subject to the Privacy Act (5 USC 522a) and should be treated accordingly.

From: Kayleigh Ruybalid <truybalid@harvestmidstream.com>
Sent: Thursday, November 05, 2020 4:45 PM
To: Church, Stacey <Church.Stacey@epa.gov>; Collier, Laura <collier.laura@epa.gov>
Cc: Monica Smith <msmith@harvestmidstream.com>
Subject: Part 71 Fee Expired Check

Hello,

We had submitted a Part 71 fee payment earlier this year in March to EPA, but our AP department alerted us that the check was never deposited by EPA.

We have a shipping confirmation that the check was delivered on 3/16/2020 to the following address:

Collections Team

US EPA OCFO/OC/ACAD/FCB
1300 Pennsylvania Ave NW
Mail Cod 2733R
Washington, DC 20004

I have tried contacting both individuals copied on this e-mail and left voicemails, but have not received a response.

This check has been cancelled, but we will be happy to reissue and resubmit the payment if you would please provide where the check needs to be sent to ensure it is received and deposited in a timely manner.

Please advise at your earliest convenience.

Thank you,

T. Kayleigh Ruybalid
EHS Compliance Administrator
Harvest Midstream Company
1755 Arroyo Drive | Bloomfield, NM | 87413
O) 505-634-4316 | F) 505-632-4737
truybalid@harvestmidstream.com

Harvest Midstream Company

VENDOR 1070478

CHECK DATE 11/13/2020

INVOICE NUMBER	INVOICE DATE		DISCOUNT TAKEN	AMOUNT PAID
030420A	03/04/2020	Part 71 Fee Payment Los	0.00	2,071.69
		Total:	0.00	2,071.69

F94446

THIS CHECK IS PRINTED IN BLUE INK ON WHITE PAPER WITH A VOID SECURITY BACKGROUND AND MICROPRINT SIGNATURE LINE.

Harvest Midstream Company
P.O. Box 61229
Houston, Texas 77208-1229

AMEGY BANK
5 POST OAK BLVD
4400 POST OAK PARKWAY
HOUSTON, TX 77027

35-1125/1130

CHECK NO. 62058258

PAY Two Thousand Seventy One Dollars and Sixty Nine Cents

TO THE ORDER OF:
US ENVIRONMENTAL PROTECTION AGENCY
GOVERNMENT LOCKBOX 979078
1005 CONVENTIONAL PLAZA
ST LOUIS MO 63101

DATE 11/13/2020

VOID AFTER 90 DAYS

AMOUNT *******2,071.69

Colleen Elkins

BY

MP

⑈62058258⑈ ⑆113011258⑆ ⑈53267652⑈

0133460

Harvest Midstream Company
P.O. Box 61229
Houston, Texas 77208-1229

PD3DCV00100010 - 545981

US ENVIRONMENTAL PROTECTION AGENCY
GOVERNMENT LOCKBOX 979078
1005 CONVENTIONAL PLAZA
ST LOUIS MO 63101

00010010101L0400 - PD3DCV00100010

FEDERAL RESERVE BOARD OF GOVERNORS REG. CC

ENDORSE

BEFORE CASHING

HARVEST
MIDSTREAM

1755 Arroyo Drive
Bloomfield, NM 87413
Phone 505-632-4600
Fax 505-632-4682
harvestmidstream.com

March 12, 2020

U.S. EPA
OCFO/OC/ACAD/FCB
Attn: Collections Team
1300 Pennsylvania Ave NW
Mail Code 2733R
Washington, DC 20004

re: Title V Part 71 Annual Fee Form FF - 2019
Permit R6FOP-NM-04-R2 – Los Mestenios Compressor Station

Dear Madam/Sir,

In accordance with condition 5.1 of the Part 71 operating permit number R6FOP-NM-04-R2 for Harvest Four Corners LLC's Los Mestenios Compressor Station, please find enclosed the Fee Filing Form FF, for the payment for pollutants emitted during the calendar year 2019. Also enclosed is check number 0062053521 in the amount of $2,071.69 for the annual operating permit fee.

If you have any questions, please call me at (505) 632-4625 or Bobby Myers of Cirrus Consulting at (801) 484-4412.

Sincerely,

Monica Smith

Monica Smith
Environmental Specialist

Attachments

United States Environmental Protection Agency

OMB No. 2060-0336, Expires 11/30/2022

Federal Operating Permit Program (40 CFR Part 71)
FEE FILING FORM (FF)

The purpose of this form is to ensure that fee payments made by check are credited to the proper facility and to the proper government account. Send this form, along with form **FEE** and the check, to the appropriate lockbox bank address listed on the following page. This form is required whenever you pay by check, including for initial fee payment and to pay annual fees. Part 71 fees may be paid by check or electronically, and further information on making payments by check or electronically is provided on the following page.

Source or Facility Name Harvest Four Corners, LLC's Los Mestenios Compressor Station

Source Location Rio Arriba County, New Mexico

EPA Region where Source Located Region 6

Mailing Address:

Street/P.O. Box 1755 Arroyo Drive

City Bloomfield

State NM ZIP 87413 - ______

Contact Person: Monica Smith

Title Environmental Specialist

Telephone (505) 632 - 4625 Ext. ______

Total Fee Payment Remitted: $ 2071.69

TWO PAYMENT OPTIONS FOR PART 71 FEES:

OPTION 1 - CHECK PAYMENT VIA U.S. POSTAL SERVICE

- Fee payment shall be in U.S. currency drawn on a U.S. bank.
- Check should be made out to the order of the "U.S. Environmental Protection Agency."
- Indicate on the check that the payment is for "Part 71 Fee Payment."
- Make a photocopy of the check.

- **Send the following to the EPA region (or delegate agency):**
  - ✓ Form *FEE* (EPA Form 5900-03) and
  - ✓ Photocopy of check

- **Send the following to the address below:**
  - ✓ Form *FF* (EPA Form 5900-06) and
  - ✓ Original check

Address** for **Regular Mail (U.S. Postal Service):
U.S. EPA OCFO/OC/ACAD/FCB Attn: Collections Team 1300 Pennsylvania Ave NW Mail Code 2733R Washington, DC 20004

- **Tips for Completing form FF (Fee Filing Form)**
  - ***Source Location:*** Physical location - Street address (if any), City, County, and State.
  - ***Mailing Address:*** Address for the EPA to send correspondence. This address may be different from the source location, such as a corporate office.
  - ***EPA Region:*** EPA region in which the source is located (e.g., EPA Region 8).
  - ***Contact:*** Person that can best answer questions concerning fee payment.

OPTION 2 – ONLINE PAYMENT

- Part 71 fees can be paid online at www.pay.gov using form **"SFO 1.1 (EPA Miscellaneous Payments - Cincinnati Finance Center)."** *Note that EPA Form 5900-06 cannot be used for online payments.*

- **Tips for completing online form SFO 1.1:**
  - From the "*Type of Payment*" drop down menu, select "Other/Miscellaneous"
  - On the "*Bill# or description*" line, enter "Part 71 Fee Payment"
  - In the "*Comments*" box, enter the source or facility name and the part 71 permit number associated with this payment.

- **After submitting payment online, send the following to the EPA region (or delegate agency):**
  - Form *FEE* (EPA Form 5900-03) and
  - Copy of the electronic payment confirmation generated by the online payment system.

- **FOR MORE INFORMATION:** The following link provides detailed information on how to make payments to EPA for part 71 fees, penalties, and interest, including contact information for EPA's Accounts Receivable Branch in Cincinnati https://www.epa.gov/financial/makepayment

- Questions/inquiries may be sent to: CollectionInquiryMailbox@epa.gov
  Laura Collier - collier.laura@epa.gov
  Stacey Church - church.stacey@epa.gov

ORIGIN ID:FMNA (505) 634-4316
TRISTEN RUYBALID
HARVEST FOUR CORNERS, LLC
1755 ARROYO DRIVE

BLOOMFIELD, NM 87413
UNITED STATES US

SHIP DATE: 17NOV20
ACTWGT: 0.50 LB
CAD: 113465079/INET4280

BILL SENDER

TO CINCINNATI FINANCE CENTER
US EPA
1005 CONVENTION PLAZA
LOCKBOX #979078
ST. LOUIS MO 63101
(202) 564-7593 REF:
INV:
PO: DEPT:

56BJ5/BAB9/B766

FedEx Express

E

J202020071401uv

TRK# 0201 7721 0524 0388

WED - 18 NOV 4:30P
STANDARD OVERNIGHT

XX CPSA

63101
STL
MO-US

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

Kayleigh Ruybalid

From:	TrackingUpdates@fedex.com
Sent:	Wednesday, November 18, 2020 8:52 AM
To:	Kayleigh Ruybalid
Subject:	[EXTERNAL] FedEx Shipment 772105240388: Your package has been delivered

FedEx®

Hi. Your package was delivered Wed, 11/18/2020 at 9:48am.

Delivered to 1005 CONVENTION PLZ, ST. LOUIS, MO 63101
Received by J.EBLER

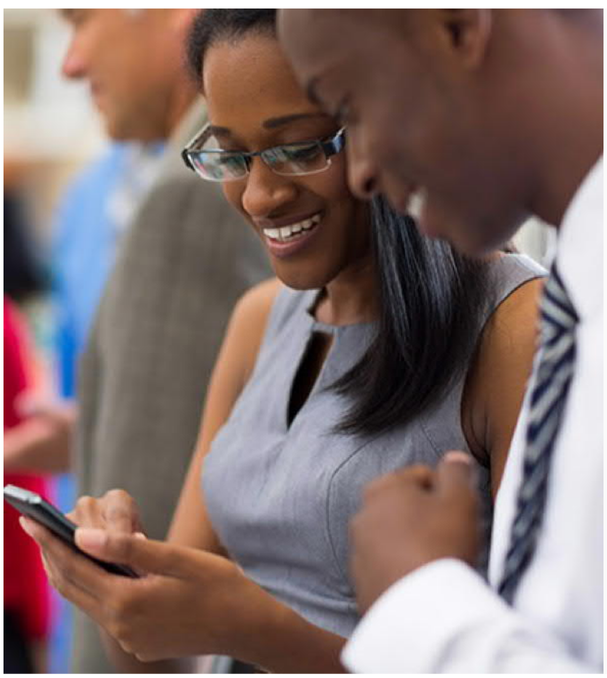
OBTAIN PROOF OF DELIVERY

Personal Message

Los Mestenios Part 71 Fee Payment Resubmittal

TRACKING NUMBER 772105240388

FROM	Harvest Four Corners, LLC 1755 Arroyo Drive Bloomfield, NM, US, 87413
TO	US EPA Cincinnati Finance Center 1005 Convention Plaza Lockbox #979078 ST. LOUIS, MO, US, 63101
SHIP DATE	Tue 11/17/2020 04:42 PM
DELIVERED TO	Mailroom
PACKAGING TYPE	FedEx Envelope
ORIGIN	Bloomfield, NM, US, 87413
DESTINATION	ST. LOUIS, MO, US, 63101
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	0.50 LB
SERVICE TYPE	FedEx Standard Overnight



This tracking update has been requested by:

Company name:	Harvest Four Corners, LLC
Name:	Tristen Ruybalid
Email:	truybalid@harvestmidstream.com

FOLLOW FEDEX

Please do not respond to this message. This email was sent from an unattended mailbox. This report was generated at approximately 9:51 AM CST 11/18/2020.

All weights are estimated.

To track the latest status of your shipment, click on the tracking number above.

Standard transit is the date and time the package is scheduled to be delivered by, based on the selected service, destination and ship date. Limitations and exceptions may apply. Please see the FedEx Service Guide for terms and conditions of service, including the FedEx Money-Back Guarantee, or contact your FedEx Customer Support representative.

Thank you for your business.

HARVEST MIDSTREAM

1755 Arroyo Drive
Bloomfield, NM 87413
Phone 505-632-4600
Fax 505-632-4682
harvestmidstream.com

May 10, 2021

U.S. EPA
OCFO/OC/ACAD/FCB
Attn: Collections Team
1300 Pennsylvania Ave NW
Mail Code 2733R
Washington, DC 20004

re: Title V Part 71 Annual Fee Form FF - 2020
Permit R6FOP-NM-04-R2 – Los Mestenios Compressor Station

Dear Madam/Sir,

In accordance with condition 5.1 of the Part 71 operating permit number R6FOP-NM-04-R2 for Harvest Four Corners LLC's Los Mestenios Compressor Station, please find enclosed the Fee Filing Form FF, for the payment for pollutants emitted during the calendar year 2020. Also enclosed is check number 46001066 in the amount of $1,561.56 for the annual operating permit fee.

If you have any questions, please call me at (505) 632-4625 or Bobby Myers of Cirrus Consulting at (801) 484-4412.

Sincerely,

Monica Smith

Monica Smith
Environmental Specialist

Attachments

EPA United States Environmental Protection Agency

OMB No. 2060-0336, Expires 11/30/2022

Federal Operating Permit Program (40 CFR Part 71)
FEE FILING FORM (FF)

The purpose of this form is to ensure that fee payments made by check are credited to the proper facility and to the proper government account. Send this form, along with form **FEE** and the check, to the appropriate lockbox bank address listed on the following page. This form is required whenever you pay by check, including for initial fee payment and to pay annual fees. Part 71 fees may be paid by check or electronically, and further information on making payments by check or electronically is provided on the following page.

Source or Facility Name Harvest Four Corners, LLC's Los Mestenios Compressor Station

Source Location Rio Arriba County, New Mexico

EPA Region where Source Located Region 6

Mailing Address:

Street/P.O. Box 1755 Arroyo Drive

City Bloomfield

State NM ZIP 87413 -

Contact Person: Monica Smith

Title Environmental Specialist

Telephone (505) 632 - 4625 Ext.

Total Fee Payment Remitted: $ 1561.56

TWO PAYMENT OPTIONS FOR PART 71 FEES:

OPTION 1 - CHECK PAYMENT VIA U.S. POSTAL SERVICE

- Fee payment shall be in U.S. currency drawn on a U.S. bank.
- Check should be made out to the order of the "U.S. Environmental Protection Agency."
- Indicate on the check that the payment is for "Part 71 Fee Payment."
- Make a photocopy of the check.

- **Send the following to the EPA region (or delegate agency):**
  - ✓ Form *FEE* (EPA Form 5900-03) and
  - ✓ Photocopy of check

- **Send the following to the address below:**
  - ✓ Form *FF* (EPA Form 5900-06) and
  - ✓ Original check

Address* for *Regular Mail (U.S. Postal Service):
U.S. EPA OCFO/OC/ACAD/FCB Attn: Collections Team 1300 Pennsylvania Ave NW Mail Code 2733R Washington, DC 20004

- **Tips for Completing form FF (Fee Filing Form)**
  - ***Source Location:*** Physical location - Street address (if any), City, County, and State.
  - ***Mailing Address:*** Address for the EPA to send correspondence. This address may be different from the source location, such as a corporate office.
  - ***EPA Region:*** EPA region in which the source is located (e.g., EPA Region 8).
  - ***Contact:*** Person that can best answer questions concerning fee payment.

OPTION 2 – ONLINE PAYMENT

- Part 71 fees can be paid online at www.pay.gov using form **"SFO 1.1 (EPA Miscellaneous Payments - Cincinnati Finance Center)."** *Note that EPA Form 5900-06 cannot be used for online payments.*

- **Tips for completing online form SFO 1.1:**
  - From the "*Type of Payment*" drop down menu, select "Other/Miscellaneous"
  - On the "*Bill# or description*" line, enter "Part 71 Fee Payment"
  - In the "*Comments*" box, enter the source or facility name and the part 71 permit number associated with this payment.

- **After submitting payment online, send the following to the EPA region (or delegate agency):**
  - Form *FEE* (EPA Form 5900-03) and
  - Copy of the electronic payment confirmation generated by the online payment system.

- **FOR MORE INFORMATION:** The following link provides detailed information on how to make payments to EPA for part 71 fees, penalties, and interest, including contact information for EPA's Accounts Receivable Branch in Cincinnati https://www.epa.gov/financial/makepayment

- Questions/inquiries may be sent to: CollectionInquiryMailbox@epa.gov
  Laura Collier - collier.laura@epa.gov
  Stacey Church - church.stacey@epa.gov

Harvest Midstream Company

P.O.Box 61529
Houston TX 77002

Owner:	40011027	Check Date:	04/09/2021	Check Number:	46001066

Invoice No	Inv. Date	Description	Discount	Net Amount
1900002391	04/07/2021	032421	$0.00	$1,561.56

THIS CHECK IS PRINTED ON CHEMICALLY REACTIVE PAPER THAT HAS VISIBLE FIBERS AND A WATERMARK – HOLD TO LIGHT TO VIEW

AMEGY BANK 32-1125
1130

Void After 90 Days

Harvest Midstream Company
P.O.Box 61529
Houston TX 77002

Check No	Check Date	Check Amount
46001066	04/09/2021	******$1,561.56

PAY *One Thousand Five Hundred Sixty-One Dollars And Fifty-Six Cents*

TO THE ORDER OF
US ENVIRONMENTAL PROTECTION AGENCY
1300 PENNSYLVANIA AVE NW MAIL
WASHINGTON DC 20004

Colleen Elkins

Authorized Signature

⑈46001066⑈ ⑆113011258⑆ 0053267652⑈

ENDORSE HERE

X

CHECK HERE IF MOBILE DEPOSIT

DO NOT WRITE, STAMP OR SIGN BELOW THIS LINE

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MP

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The security features listed below, as well as those not listed, exceed industry guidelines. Absence of these features may indicate alteration.

Security Features:	Results of document alteration:
Security Screen:	Absence of "Original Document" Verbiage on back of check
Micro-Printing - "MP"	Small type under endorsement area and surrounding
	Padlock Security box appears blurred if copied or scanned
Chemically Sensitive Paper:	High Polarity Solvents, Low Polarity Solvents, Oxidants Acids and Alkalis. Appearance of brown and or blue stains may indicate alterations.
Fluorescent Fibers:	Invisible unless exposed to ultraviolet light.
Visible Fibers:	Absence of visible red and/or blue fibers may indicate alteration.
Fourdrinier Watermark:	True watermark visible from both sides, absence indicates alteration.

ORIGIN ID:FMNA (505) 634-4316
TRISTEN RUYBALID
HARVEST FOUR CORNERS, LLC
1755 ARROYO DRIVE

BLOOMFIELD, NM 87413
UNITED STATES US

SHIP DATE: 10MAY21
ACTWGT: 0.50 LB
CAD: 113465079/INET4340

BILL SENDER

TO COLLECTIONS TEAM
US EPA OCFOOCACADFCB
1300 PENNSYLVANIA AVE NW
MAIL CODE 2733R
WASHINGTON DC 20004
(202) 564-7593 REF:
INV:
PO: DEPT:

56DJ3/71DC/FE4A

FedEx Express

J211321033101uv

TUE - 11 MAY 4:30P
STANDARD OVERNIGHT

TRK# 7736 8225 0479
0201

20004
XC RDVA IAD
DC-US

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

Kayleigh Ruybalid

From: TrackingUpdates@fedex.com
Sent: Tuesday, May 11, 2021 9:58 AM
To: Kayleigh Ruybalid
Subject: [EXTERNAL] FedEx Shipment 773682250479: Your package has been delivered

Hi. Your package was delivered Tue, 05/11/2021 at 11:54am.

Delivered to 1300 PENNSYLVANIA AVE NW, WASHINGTON, DC 20004

OBTAIN PROOF OF DELIVERY

Personal Message

Los Mestenios TV Part 71 Annual Fee Form FF 2020 Payment

TRACKING NUMBER 773682250479

FROM	Harvest Four Corners, LLC 1755 Arroyo Drive Bloomfield, NM, US, 87413
TO	US EPA OCFOOCACADFCB Collections Team 1300 Pennsylvania Ave NW Mail Code 2733R WASHINGTON, DC, US, 20004
SHIP DATE	Mon 5/10/2021 04:36 PM
PACKAGING TYPE	FedEx Envelope
ORIGIN	Bloomfield, NM, US, 87413
DESTINATION	WASHINGTON, DC, US, 20004
SPECIAL HANDLING	Deliver Weekday
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	0.50 LB
SERVICE TYPE	FedEx Standard Overnight

This tracking update has been requested by:

Company name:	Harvest Four Corners, LLC
Name:	Tristen Ruybalid
Email:	truybalid@harvestmidstream.com

Please do not respond to this message. This email was sent from an unattended mailbox. This report was generated at approximately 10:58 AM CDT 05/11/2021.

All weights are estimated.

To track the latest status of your shipment, click on the tracking number above.

Standard transit is the date and time the package is scheduled to be delivered by, based on the selected service, destination and ship date. Limitations and exceptions may apply. Please see the FedEx Service Guide for terms and conditions of service, including the FedEx Money-Back Guarantee, or contact your FedEx Customer Support representative.

Thank you for your business.

1755 Arroyo Drive
Bloomfield, NM 87413
Phone 505-632-4600
Fax 505-632-4682
harvestmidstream.com

March 24, 2021

U.S. EPA, Region 6
Air and Radiation Division Air Permits Section (ARPE)
1201 Elm Street, Suite 500
Dallas, TX 75270

re: Title V Part 71 Annual Fee Form FEE - 2020
Permit R6FOP-NM-04-R2 – Los Mestenios Compressor Station

Dear Madam/Sir,

In accordance with condition 4.15 of the Part 71 operating permit number R6FOP-NM-04-R2 for Harvest Four Corners LLC's Los Mestenios Compressor Station, please find enclosed the Form FEE – Fee Calculation Worksheet, for the quantification for pollutants emitted during the calendar year 2020. In accordance with condition 5.1.2 of the operating permit, the Fee Filing Form FF and the annual operating permit fee in the amount of $1,561.56 will be submitted no later than July 20, 2021, and a photocopy of the fee check and payment will be provided to you.

If you have any questions, please call me at (505) 632-4625 or Bobby Myers of Cirrus Consulting at (801) 484-4412.

Sincerely,

Monica Smith
Environmental Specialist

Attachments

United States Environmental Protection Agency

OMB No. 2060-0336, Expires 11/30/2022

Federal Operating Permit Program (40 CFR Part 71)
FEE CALCULATION WORKSHEET (FEE)

Use this form initially, or thereafter on an annual basis, to calculate part 71 fees.

A. General Information

Type of fee (Check one): ___Initial _x_ Annual

Deadline for submitting fee calculation worksheet _04_/_01_/_2021_

For initial fees, emissions are based on (Check one):

_x_ Actual emissions for the preceding calendar year. (Required in most circumstances.)

___ Estimates of actual emissions for the current calendar year. (Required when operations commenced during the preceding calendar year.)

Date commenced operations ____/____/______

___ Estimates of actual emissions for the preceding calendar year. (Optional after a part 71 permit was issued to replace a part 70 permit, but only if initial fee payment is due between January 1 and March 31; otherwise use actual emissions for the preceding calendar year.)

For annual fee payment, you are required to use actual emissions for the preceding calendar year.

B. Source Information: Complete this section only if you are paying fees but not applying for a permit.

Source or facility name _Harvest Four Corners, LLC's Los Mestenios Compressor Station_________

Mailing address: Street or P.O. Box _1755 Arroyo Drive_________________________________

City: _Bloomfield__________________________ State: _NM_____ ZIP_87413_________ - ______

Contact person: _Monica Smith______________ Title: _Environmental Specialist_______________

Telephone (_505_) _632_ - _4625__ Ext____ Part 71 permit no. _R6FOP-NM-04-R2_________

C. Certification of Truth, Accuracy and Completeness: Only needed if not submitting a separate form CTAC.

I certify under penalty of law, based on information and belief formed after reasonable inquiry, the statements and information contained in this submittal (form and attachments) are true, accurate and complete.

Name (signed) ____

Name (typed) _ Travis Jones__________________________________ Date:____ /____ /_______

D. Annual Emissions Report for Fee Calculation Purposes -- Non-HAP

You may use this to report actual emissions (tons per year) of regulated pollutants (for fee calculation) on a calendar-year basis for both initial and annual fee calculation purposes. Section E is designed to report HAP emissions. Quantify all actual emissions, including fugitives, but do not include insignificant emissions and certain regulated air pollutants that are not counted for fee purposes, such as CO and GHGs (see instructions). Sum the emissions in each column to calculate subtotals. Subtotals should be reported to the nearest tenth (0.1) of a ton at the bottom of the page. If any subtotal exceeds 4,000 tons, enter 4,000 for that column.

This data is for _2020_ (year)

Emission Unit ID	NOx	VOC	SO2	PM10	Lead	Other
1	14.9	0.4				
2	0.0	0.0				
Tk-1		9.8				
F-1		3.5				
SUBTOTALS:	14.9	13.7				

E. Annual Emissions Report for Fee Calculation Purposes -- HAP

HAP Identification. Identify individual HAP emitted at the facility, identify the CAS number, and assign a unique identifier for use in the second table in this section. Whenever assigning identifier codes, use "HAP1" for the first, "HAP2" for the second, and so on.

Name of HAP	CAS No	Identifier
Acetaldehyde	75-07-0	HAP __1_
Formaldehyde	50-00-0	HAP __2_
Benzene	71-43-2	HAP __3_
Toluene	108-88-3	HAP __4_
Ethylbenzene	100-41-4	HAP __5_
Xylenes	1330-20-7	HAP __6_
n-Hexane	110-54-3	HAP __7_

HAP Emissions. Report the actual emissions of individual HAP identified above. Use the identifiers assigned in the table above. Include all emissions, including fugitives, and do not include insignificant emissions. Sum the emissions in each column to calculate subtotals. Report subtotals to the nearest tenth (0.1) of a ton at the bottom of the page. If any subtotal exceeds 4,000 tons, enter 4,000.

This data is for _2019_ (year)

Emissions Unit ID	Actual Emissions (Tons/Year)							
	HAP_1_	HAP_2_	HAP_3_	HAP_4_	HAP_5_	HAP_6_	HAP_7_	HAP___
1	0.2	0.3						
2	0.0	0.0						
Tk-1			0.1	0.1	0.0	0.1	1.5	
F-1			0.0	0.0	0.0	0.0	0.0	
SUBTOTALS:	0.2	0.3	0.0	0.1	0.0	0.0	1.5	2.1

F. Fee Calculation Worksheet

This worksheet is used to calculate the total fee owed (including the emissions-based fee and the GHG fee adjustment) for both initial and annual fee payment purposes. Reconciliation is only for cases where you are paying the annual fee and you used any type of estimate of actual emissions when you calculated the initial fee. If you do not need to reconcile fees, complete line 1-5 (emissions summary) and then skip down to line 21 (emission calculation). See instructions for more detailed explanation.

EMISSIONS SUMMARY

1. Sum the subtotals from section D of this form (non-HAP) and enter the total, rounded to the nearest tenth (0.1) of a ton.	28.6
2. Sum the subtotals from section E of this form (HAP) and enter the total, rounded to the nearest tenth (0.1) of a ton.	2.1
3. Sum lines 1 and 2.	30.7
4. Enter the emissions that were counted twice. If none, enter "0."	2.1
5. Subtract line 4 from line 3, round to the nearest ton, and enter the result here. This is the **total emissions** that count for fees purposes.	28.6

RECONCILIATION
(WHEN INITIAL FEES WERE BASED ON ESTIMATES FOR THE "CURRENT" CALENDAR YEAR)

Only complete lines 6-10 if you are paying the first annual fee and initial fees were based on estimated actual emissions for the calendar year in which you paid initial fees; otherwise skip to line 11 or to line 21.

6. Enter the total estimated actual emissions for the year the initial fee was paid (previously reported on line 5 of the initial fee form).	
7. If line 5 is greater than line 6, subtract line 6 from line 5, and enter the result. Otherwise enter "0."	
8. If line 6 is greater than line 5, subtract line 5 from line 6, and enter the result. Otherwise enter "0."	
9. If line 7 is greater than 0, multiply line 7 by last year's fee rate ($/ton) and enter the result here. This is the underpayment. Go to line 21.	
10. If line 8 is greater than 0, multiply line 8 by last year's fee rate ($/ton) and enter the result here. This is the overpayment. Go to line 21.	

RECONCILIATION (WHEN INITIAL FEES WERE BASED ON ESTIMATES FOR THE "PRECEDING" CALENDAR YEAR) Only complete lines 11-20 if you are paying the first annual fee and initial fees were based on estimated actual emissions for the calendar year preceding initial fee payment; otherwise skip to line 21. If completing this section, you will also need to complete sections D and E to report actual emissions for the calendar year preceding initial fee payment.	
11. Sum the actual emissions from section D (non-HAP) for the calendar year preceding initial fee payment and enter the result here.	
12. Sum the actual emissions from section E (HAP) for the calendar year preceding initial fee payment and enter the result here.	
13. Add lines 11 and 12 and enter the total here. These are total actual emissions for the calendar year preceding initial fee payment.	
14. Enter double counted emission from line 13 here. If none, enter "0."	
15. Subtract line 14 from line 13, round to the nearest ton, and enter the result here.	
16. Enter the total estimated actual emissions previously reported on line 5 of the initial fee form. These are estimated actual emissions for the calendar year preceding initial fee payment.	
17. If line 15 is greater than line 16, subtract line 16 from line 15, and enter the result here. Otherwise enter "0."	
18. If line 16 is greater than line 15, subtract line 15 from line 16, and enter the result here. Otherwise enter "0."	
19. If line 17 is greater than 0, multiply line 17 by last year's fee rate ($/ton) and enter the result here. This is the underpayment.	
20. If line 18 is greater than 0, multiply line 18 by last year's fee rate ($/ton) and enter the result on this line. This is the overpayment.	
EMISSION FEE CALCULATION	
21. Multiply line 5 (tons) by the current fee rate ($/ton) and enter the result here. This is the unadjusted emissions fee. Continue on to line 23.	$1561.56
GHG FEE ADJUSTMENT	
22. If you are submitting an initial permit application and this is the first time you are paying fees, enter $2,236, otherwise enter "0". [Note that any updates to the initial application are covered under this one-time charge.]	0
23. Enter the number of permit modifications (or related permit actions) you have submitted to the permitting authority since you last paid fees. If none, skip to line 25.	0
24. Multiply the number in line 23 by $365 and enter the result.	0

25. If you have submitted a permit renewal application since the last time you paid fees enter $520, otherwise enter “0”	0
26. Sum line 22, 24, and 25 and enter the result. This is the GHG fee adjustment	0
OTHER ADJUSTMENTS	
27. Add the total on line 21 and the total on line 26 and enter the result.	$1561.56
28. Enter any underpayment from line 9 or 19 here. Otherwise enter "0."	0
29. Enter any overpayment from line 10 or 20 here. Otherwise enter "0."	0
30. If line 28 is greater than "0," add it to line 27 and enter the result here. If line 29 is greater than "0," subtract this from line 27 and enter the result here. Otherwise enter the amount on line 27 here. This is the fee adjusted for over/underpayment.	$1561.56
31. Enter any credit for fee assessment error here. Otherwise, enter "0."	0
32. Subtract line 31 from line 30 and enter the result here. Stop here. This is the **TOTAL FEE (AFTER ADJUSTMENTS)** that you must remit to EPA.	$1561.56

INSTRUCTIONS FOR FEE
FEE CALCULATION WORKSHEET

Information Collection Burden Estimates

The public reporting and recordkeeping burden for this collection of information is estimated to average 247 hours per respondent per year. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

DETAILED INSTRUCTIONS

Use this form to initially or annually calculate fees. This form is for paying fees to EPA or a delegate agency (such as a State or tribe) under a part 71 operating permit program. The requirements for paying fees under part 71 programs, as well as the forms and instructions contained herein, are based on the requirements of 40 CFR 71.9

There may be cases, under a part 71 program, when you are not required to complete this form or pay the EPA fee rate (where the part 71 program has been delegated and EPA's fee has been suspended because EPA incurs no administrative costs). In such cases, the delegate agency will instruct you on how to calculate fees and how to pay them. If in doubt, contact your permitting authority.

General Rules for Fee Calculation under Part 71:

- Use the fee rate in effect at the time you pay the fee regardless of the time period that the emissions data represents. For example, if the annual fee for the current year is due July 1, you would use the fee rate in effect for the current year and the actual emissions for the previous calendar year.
- Do not prorate initial or annual fees. Pay full fees for the entire calendar year regardless of how many days you operated or were subject to the program during the previous or current year.
- Do not hesitate to contact the permitting authority if you have any doubt about how to calculate fees, especially if you have an unusual set of circumstances not addressed specifically by these forms or whenever the permit requirements appear to conflict with these forms (however, always assume the permit requirements take precedence in such cases).

Section A. General Information

The deadline for submitting the fee form and paying the fee for initial fee payment purposes for most sources is the same deadline as for submitting all other forms required for the initial permit application. Other deadlines apply for initial fee payment in certain limited circumstances:

- When a source is subject to part 71 because of an unresolved EPA objection to a part 70 permit, fees are not due with the part 71 application, but are due 3 months following the date of the issuance of the part 71 permit.
- When EPA withdraws approval of a part 70 program and implements a part 71 programs, fees are submitted according to a schedule based on the source's SIC code (within 6 to 9 months of the effective date of the part 71 program).

The deadline for submitting the fee form and paying the fee for annual fee payment purposes is the anniversary date of initial fee payment. This is required whether or not a permit has been issued. If you were required to pay initial fees between January 1 and March 31, the regulations allow for submittal of annual fees no later than April 1.

Whether you are paying initial or annual fees see the instructions for sections D and E for more information on which calendar-year emission data to use (preceding or current year) and how to quantify such emissions (actual emissions or estimates of actual emissions).

Section B. Source Information

Complete this section only if you are preparing this form for submittal at a different time than for the other portions of an initial application or for annual fee purposes.

Section C. Certification of Truth, Accuracy and Completeness

This form and any other document required by a permit must be signed by a responsible official certifying truth, accuracy and completeness of the information. If you are submitting a separate **CTAC** form, there is no need to complete this section of the form. If you complete this section, there is no need to submit form **CTAC** separately.

Section D. Annual Emissions Report for Fee Calculation Purposes – Non-HAP

Calculate actual emissions of regulated pollutants (for fee calculation), except for HAP, on a calendar-year basis for the facility in this section. Section E is provided to report actual emissions of HAP. Note the phrase “regulated pollutant (for fee calculation)” is any “regulated air pollutant” except carbon monoxide (CO), and pollutants regulated solely because they are: 1) subject to regulation under section 112(r) of the Act, or 2) a class I or II substance under title VI of the Act. **Note that GHG emissions are not counted for fee purposes.**

If more than one year of data is being submitted with the fee calculation worksheet, copy this page and complete a separate table for each year. If you are submitting an initial application, you may use emissions data already reported on form **EMISS**, provided this is the same data you would otherwise report in sections D and E of this form. If using **EMISS** in this manner, please note this on the fee calculation form. Also, sources must submit attachments to this form to show (at a minimum) examples of the calculations used to determine these values.

Show actual emissions for each listed air pollutant for each emission unit. Values should be reported to the nearest tenth (0.1) of a ton.

The column for "other" is for other regulated pollutants (for fee calculation) not already listed on the form. Write in the name of the pollutant in the proximity of the "other" column. If more than one such pollutant, show the pollutants, and the totals on an attachment.

Actual emissions must be calculated using actual operating hours, production rates, in-place control equipment, and types of materials processed, stored, or combusted over the preceding calendar year. Sources that have been issued title V permits are required to compute actual emissions using compliance methods required by the permits, such as monitoring or source testing data. If this is not possible, actual emissions should be determined using other federally recognized procedures.

For initial fee calculation purposes, most sources are required to use actual emissions for the preceding calendar year. However, there are certain exceptions where estimates of actual emissions are either required or allowed in place of actual emissions for the preceding calendar year (see table below):

Exception	Emission Data
When the source commenced operation during the preceding calendar year.	Estimates of actual emissions for the “current” calendar year are required
When EPA withdraws approval of a part 70 program and implements a part 71 program, and the source pays initial part 71 fees between January 1 and March	Either estimates of actual emissions for the “preceding” calendar year or actual emissions for the preceding calendar year may be used.
When a part 71 permit was issued following an unresolved objection to a part 70 permit, and the source is required to pay initial part 71 fees between January 1 and March 31.	Either estimates of actual emissions for the “preceding” calendar year or actual emissions for the preceding calendar year may be used.

<u>For annual fee purposes</u>, fee calculation should be based on actual emissions for the preceding calendar year in all cases.

In most cases you will only need to report one set of emission data using sections D and E of this form (the data that is the basis of the initial or annual fee being paid as explained above). This data is subsequently carried over to lines 1 and 2 of section F (Fee Calculation Worksheet) of the form.

However, there is one exception where you would be required to report two different sets of emissions data using sections D and E – when paying the first annual fee and reconciliation is required because the initial fee was based on estimated actual emissions for the “preceding” calendar year (the year preceding initial fee payment). In this case, the two data sets would be:

- actual emissions for the year initial fees paid (for annual fee purposes in lines 1-5 of section F of the form), and
- actual emissions for the year preceding initial fee payment (for reconciliation in lines 11-20 of the form)

Whenever reconciliation is required as part of annual fee payment, you will also need a copy of the fee forms you previously submitted with initial fee payment in order to obtain the value of estimated actual emissions.

Include all fugitive emissions in the calculation of actual emissions, including those that do not count for applicability. Do not include any insignificant emissions identified on form **IE**.

The subtotal line in section D of the form is provided at the bottom of each column to enter total emissions for each pollutant reported above. Each subtotal should be reported to the nearest tenth (0.1) of a ton. If any subtotal exceeds 4,000 tons, enter 4,000 tons for that column.

Any necessary adjustments for double counting of emissions will be performed later in section F.

<u>Section E. Annual Emissions Report for Fee Calculation Purposes -- HAP</u>

List the actual emissions of individual HAP from each emission unit. If you are initially applying for a permit, you may use the emissions of HAP reported on form **EMISS,** instead of completing this section of this form, provided these emissions are the same as you would otherwise report using this section of the form. If you are doing this, please note it on the form.

This section is composed of two tables. The first table is to identify individual HAP emitted at each emission unit. Assign a unique identifier for use in the second table. Please use "HAP1" for the first

one, "HAP2" for the second one, and so on. The second table is to calculate the actual emission of individual HAP at each emission unit. Use the identifiers assigned in the first table to label the column headers for the second table. You may round and report these emissions to the nearest tenth (0.1) of a ton. Sum the values in each column and enter the subtotals at the bottom of the table. If any subtotal exceeds 4,000 tons, enter 4,000 for that column.

See instructions for section D for more information on reporting emissions data.

Section F. Fee Calculation Worksheet

This worksheet is used to sum the total tons of actual emissions subject to fees, adjust for double counting of emissions, perform certain reconciliations for underpayment and overpayment of fees and adjust for fee assessment errors, if needed, and ultimately to determine the total fee to be paid.

A detailed explanation of Section F follows (separated into six parts):

Emissions Summary

The subtotals for each pollutant listed in Sections D and E (or from form **EMISS**) are added together to calculate the total emissions (in tons per year) for the facility.

The emissions that are reported here will vary for initial fee payment purposes, depending on the specific circumstances, but will always be actual emissions for the preceding calendar year for annual fee purposes. See the instructions for section D for more on the emissions data you should use in the part of the form.

The total emissions are adjusted for double counting and are rounded to the nearest ton. For example, double counting may occur where a pollutant is defined as HAP and VOC. If you adjust for double counting, attach an explanation for this.

Reconciliation (When Initial Emission Fees Were Based on Estimates for the Current Calendar Year)

This section is only used by sources paying their first annual fee when their initial fee was based on estimates of calendar-year emissions for the “current” year (the same year that initial fees were paid). This reconciliation is done by comparing the actual emissions for the “current” year provided in sections D and E of this submittal with the estimate of those emissions previously provided with initial fee payment. There may have been overpayment or underpayment of the initial fee. The fee you are paying now will be adjusted for this difference later.

Reconciliation (When Initial Emission Fees Were Based on Estimates for the Preceding Calendar Year)

This section is only used by sources paying their first annual fee when their initial fee was based on estimates of calendar-year emissions for the year preceding initial fee payment, provided the source was required to pay its initial fee between January 1 and March 31, and EPA issued the Part 71permit to replace a Part 70 permit. This reconciliation is done by comparing the actual emissions for the “preceding” year provided in sections D and E of this submittal with the estimate of those emissions provided with initial fee payment. There may have been overpayment or underpayment of the initial fee. The fee you are paying now will be adjusted for this difference later.

Emission Fee Calculation

Calculate the emission-based fee using the emissions from line 5 (tons) multiplied by the fee rate ($/ton) in effect at the time the fee is paid.

GHG Fee Adjustment

The part 71 rule was amended in 2015 to require the fees to be increased by a GHG fee adjustment. The GHG adjustment must be calculated by each source that is required to pay fees. The adjustment is based on the burden for the permitting authority to conduct certain GHG evaluations or reviews related to the source, rather than on emissions. Set fees are charged for certain activities that have occurred at the source since the last time fees were paid. For an initial application, the set fee is a one-time charge that includes the costs of processing application updates. The term “permit modification” refers to any significant and minor modifications, but not to administrative amendments. The number of permit modifications must be multiplied by the set fee for modifications to determine the total GHG adjustment for modifications. The set fee for a permit renewal also includes any permit modifications that may be processed at the same time as the renewal. Note that you may need to check with the permitting authority to determine if they are holding any permit modification requests you have submitted for processing with an upcoming permit renewal.

Other Adjustments

The purpose of this section is to adjust the emissions-based to determine the total fee (after adjustments) that is due to the EPA. The emissions fee determined on line 21 is adjusted by the GHG fee adjustment, any amounts of overpayment or underpayment related to a previous fee submittal, and to correct for any fee assessment errors.

Fee assessment errors occur when the permitting authority determines that the source has calculated the fee incorrectly. If this occurs, you will be notified of the error. Any overpayment will be credited against the next fee owed. In the case of underpayment, you will be billed for the corrected fee and you will have 30 days to remit the amount. If you think the assessed fee is in error, you may submit a written explanation of the alleged error, but you must pay the fee. The permitting authority will provide a determination in 90 days. If the assessment of underpayment is in error, your account will be credited.

Fee Payment

See form **FF** (the Fee Filing form) for instructions on how to make fee payment to the EPA.

Penalties and Interest

The permitting authority will bill sources for appropriate penalties and interest for late payment or excessive underpayment of fees. Interest will be assessed on payments received later than the due date. Penalties shall be assessed if payment is not paid within 30 days of the due date. For sources issued with issued permits, penalties and interest shall be assessed for excessive underpayment of the annual fee amount.

END

Kayleigh Ruybalid

From: TrackingUpdates@fedex.com
Sent: Thursday, April 1, 2021 1:42 PM
To: Kayleigh Ruybalid
Subject: [EXTERNAL] FedEx Shipment 773296798440: Your package has been delivered

Hi. Your package was delivered Thu, 04/01/2021 at 2:34pm.

Delivered to 1201 ELM ST, DALLAS, TX 75270
Received by S.PHILLIPS

OBTAIN PROOF OF DELIVERY

Personal Message

Los Mestenios 2020 TV Part 71 Form FEE

TRACKING NUMBER 773296798440

FROM	Harvest Four Corners, LLC 1755 Arroyo Drive Bloomfield, NM, US, 87413
TO	US EPA Region-6, ARPE Air & Radiation DivAir Permits Sec 1201 Elm Street Suite 500 DALLAS, TX, US, 75270
SHIP DATE	Wed 3/31/2021 04:55 PM
DELIVERED TO	Mailroom
PACKAGING TYPE	FedEx Envelope
ORIGIN	Bloomfield, NM, US, 87413
DESTINATION	DALLAS, TX, US, 75270
SPECIAL HANDLING	Deliver Weekday
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	0.50 LB
SERVICE TYPE	FedEx Standard Overnight

This tracking update has been requested by:

Company name:	Harvest Four Corners, LLC
Name:	Tristen Ruybalid
Email:	truybalid@harvestmidstream.com

FOLLOW FEDEX

Please do not respond to this message. This email was sent from an unattended mailbox. This report was generated at approximately 2:41 PM CDT 04/01/2021.

All weights are estimated.

To track the latest status of your shipment, click on the tracking number above.

Standard transit is the date and time the package is scheduled to be delivered by, based on the selected service, destination and ship date. Limitations and exceptions may apply. Please see the FedEx Service Guide for terms and conditions of service, including the FedEx Money-Back Guarantee, or contact your FedEx Customer Support representative.

Thank you for your business.

HARVEST MIDSTREAM

1755 Arroyo Drive
Bloomfield, NM 87413
Phone 505-632-4600
Fax 505-632-4682
harvestmidstream.com

July 13, 2022

U.S. EPA
OCFO/OC/ACAD/FCB
Attn: Collections Team
1300 Pennsylvania Ave NW
Mail Code 2733R
Washington, DC 20004

Re: Title V Part 71 Form FF (for 2021 inventory)
Permit R6FOP-NM-04-R2 – Los Mestenios Compressor Station

Dear Madam/Sir,

In accordance with Condition 5.1 of the Part 71 operating permit, R6FOP-NM-04-R2, for the Harvest Four Corners, LLC – Los Mestenios Compressor Station, please find attached a check for the 2021 annual operating permit fee in the amount of $1,945.56. Also attached are the required Form FF – Filing Fee and Form FEE – Fee Calculation Worksheet.

Thank you for your assistance. If you have any questions, please call me at (505) 632-4421.

Sincerely,

Oakley Hayes

Oakley Hayes
Environmental Specialist

Attachments
- Check
- Form FF
- Form FEE

United States Environmental Protection Agency

OMB No. 2060-0336, Expires 11/30/2022

Federal Operating Permit Program (40 CFR Part 71)
FEE FILING FORM (FF)

The purpose of this form is to ensure that fee payments made by check are credited to the proper facility and to the proper government account. Send this form, along with form **FEE** and the check, to the appropriate lockbox bank address listed on the following page. This form is required whenever you pay by check, including for initial fee payment and to pay annual fees. Part 71 fees may be paid by check or electronically, and further information on making payments by check or electronically is provided on the following page.

Source or Facility Name: Harvest Four Corners, LLC - Los Mestenios Compressor Station

Source Location: Rio Arriba County, New Mexico

EPA Region where Source Located: Region 6

Mailing Address:

Street/P.O. Box: 1755 Arroyo Drive

City: Bloomfield

State: NM ZIP: 87413 - ______

Contact Person: Oakley Hayes

Title: Environmental Specialist

Telephone (505) 632 - 4421 Ext. ____

Total Fee Payment Remitted: $1,945.56

Harvest Midstream Company

P.O.Box 61529
Houston TX 77208-1529

Owner:	40011027	Check Date:	07/07/2022	Check Number:	46010523
SAP Doc No	**Inv. Date**	**Invoice No**	**Discount**		**Net Amount**
1900020727	07/06/2022	07062022	$0.00		$1,945.56

THIS CHECK IS PRINTED ON CHEMICALLY REACTIVE PAPER THAT HAS VISIBLE FIBERS AND A WATERMARK – HOLD TO LIGHT TO VIEW

AMEGY BANK

32-1125
1130

Void After 90 Days

Harvest Midstream Company
P.O.Box 61529
Houston TX 77208-1529

Check No	Check Date	Check Amount
46010523	07/07/2022	******$1,945.56

PAY *One Thousand Nine Hundred Forty-Five Dollars And Fifty-Six Cents*

TO THE ORDER OF
US ENVIRONMENTAL PROTECTION AGENCY
1300 PA AVE NW MAIL CODE 2733R
WASHINGTON DC 20004

Authorized Signature

⑈46010523⑈ ⑆113011258⑆ 0053267652⑈

ENDORSE HERE

X

CHECK HERE IF MOBILE DEPOSIT

DO NOT WRITE, STAMP OR SIGN BELOW THIS LINE

RESERVED FOR FINANCIAL INSTITUTION USE*

MP

ORIGINAL DOCUMENT

The security features listed below, as well as those not listed, exceed industry guidelines. Absence of these features may indicate alteration.

Security Features:	Results of document alteration:
Security Screen:	Absence of "Original Document" Verbiage on back of check
Micro-Printing - "MP"	Small type under endorsement area and surrounding Padlock Security box appears blurred if copied or scanned.
Chemically Sensitive Paper:	High Polarity Solvents, Low Polarity Solvents, Oxidants Acids and Alkalis. Appearance of brown and or blue stains may indicate alterations.
Fluorescent Fibers:	Invisible unless exposed to ultraviolet light.
Visible Fibers:	Absence of visible red and/or blue fibers may indicate alteration.
Fourdrinier Watermark:	True watermark visible from both sides, absence indicates alteration.

®

EPA United States Environmental Protection Agency

OMB No. 2060-0336, Expires 11/30/2022

Federal Operating Permit Program (40 CFR Part 71)
FEE CALCULATION WORKSHEET (FEE)

Use this form initially, or thereafter on an annual basis, to calculate part 71 fees.

A. General Information

Type of fee (Check one): ___Initial _X_ Annual

Deadline for submitting fee calculation worksheet _07_/_20_/_2022_

For initial fees, emissions are based on (Check one):

_X_ Actual emissions for the preceding calendar year. (Required in most circumstances.)

___ Estimates of actual emissions for the current calendar year. (Required when operations commenced during the preceding calendar year.)

Date commenced operations ____/____/______

___ Estimates of actual emissions for the preceding calendar year. (Optional after a part 71 permit was issued to replace a part 70 permit, but only if initial fee payment is due between January 1 and March 31; otherwise use actual emissions for the preceding calendar year.)

For annual fee payment, you are required to use actual emissions for the preceding calendar year.

B. Source Information: Complete this section only if you are paying fees but not applying for a permit.

Source or facility name _Harvest Four Corners, LLC - Los Mestenios Compressor Station_

Mailing address: _Street or P.O. Box 1755 Arroyo Drive_

City: _Bloomfield_ State: _NM_ ZIP:_87413_ - ______

Contact person: _Oakley Hayes_ Title: _Environmental Specialist_

Telephone (505)_632 - 4421_ Ext.: ____ Part 71 Permit No.: _R6FOP-NM-04-R2_

C. Certification of Truth, Accuracy and Completeness: Only needed if not submitting a separate form CTAC.

I certify under penalty of law, based on information and belief formed after reasonable inquiry, the statements and information contained in this submittal (form and attachments) are true, accurate and complete.

Name (signed) Travis Jones

Name (typed): _Travis Jones_ Date: _7_/_7_/_2022_

D. Annual Emissions Report for Fee Calculation Purposes -- Non-HAP

You may use this to report actual emissions (tons per year) of regulated pollutants (for fee calculation) on a calendar-year basis for both initial and annual fee calculation purposes. Section E is designed to report HAP emissions. Quantify all actual emissions, including fugitives, but do not include insignificant emissions and certain regulated air pollutants that are not counted for fee purposes, such as CO and GHGs (see instructions). Sum the emissions in each column to calculate subtotals. Subtotals should be reported to the nearest tenth (0.1) of a ton at the bottom of the page. If any subtotal exceeds 4,000 tons, enter 4,000 for that column.

This data is for 2021 (year)

Emission Unit ID	NOx	VOC	SO2	PM10	Lead	Other
1	19.3	0.4	0.2	0.3		
2	0.0	0.0	0.0	0.0		
3	0.2	0.0	0.0	0.0		
SSM		0.0				
F1		3.8				
T1		9.1				
T2		1.3				
SUBTOTALS:	19.5	14.6	0.2	0.3		

E. Annual Emissions Report for Fee Calculation Purposes -- HAP

HAP Identification. Identify individual HAP emitted at the facility, identify the CAS number, and assign a unique identifier for use in the second table in this section. Whenever assigning identifier codes, use "HAP1" for the first, "HAP2" for the second, and so on.

Name of HAP	CAS No	Identifier
Acetaldehyde	75-07-0	HAP _1_
Benzene	71-43-2	HAP _2_
Formaldehyde	50-00-0	HAP _3_
n-Hexane	110-54-3	HAP _4_

HAP Emissions. Report the actual emissions of individual HAP identified above. Use the identifiers assigned in the table above. Include all emissions, including fugitives, and do not include insignificant emissions. Sum the emissions in each column to calculate subtotals. Report subtotals to the nearest tenth (0.1) of a ton at the bottom of the page. If any subtotal exceeds 4,000 tons, enter 4,000.

This data is for _2021_ (year)

Emissions Unit ID	Actual Emissions (Tons/Year)							
	HAP_1_	HAP_2_	HAP_3_	HAP_4_	HAP_5_	HAP_6_	HAP_7_	HAP___
1	0.2	0.0	0.2	0.0				
2	0.0	0.0	0.0	0.0				
3	0.0	0.0	0.0	0.0				
SSM	0.0	0.0	0.0	0.0				
F1	0.0	0.0	0..0	0.1				
T1	0.0	0.1	0.0	0.5				
T2	0.0	0.0	0.0	0.1				
SUBTOTALS:	0.2	00.1	0.2	0.7				

F. Fee Calculation Worksheet

This worksheet is used to calculate the total fee owed (including the emissions-based fee and the GHG fee adjustment) for both initial and annual fee payment purposes. Reconciliation is only for cases where you are paying the annual fee and you used any type of estimate of actual emissions when you calculated the initial fee. If you do not need to reconcile fees, complete line 1-5 (emissions summary) and then skip down to line 21 (emission calculation). See instructions for more detailed explanation.

EMISSIONS SUMMARY

1. Sum the subtotals from section D of this form (non-HAP) and enter the total, rounded to the nearest tenth (0.1) of a ton.	34.6
2. Sum the subtotals from section E of this form (HAP) and enter the total, rounded to the nearest tenth (0.1) of a ton.	1.2
3. Sum lines 1 and 2.	35.8
4. Enter the emissions that were counted twice. If none, enter "0."	1.2
5. Subtract line 4 from line 3, round to the nearest ton, and enter the result here. This is the **total emissions** that count for fees purposes.	34.6

RECONCILIATION
(WHEN INITIAL FEES WERE BASED ON ESTIMATES FOR THE "CURRENT" CALENDAR YEAR)

Only complete lines 6-10 if you are paying the first annual fee and initial fees were based on estimated actual emissions for the calendar year in which you paid initial fees; otherwise skip to line 11 or to line 21.

6. Enter the total estimated actual emissions for the year the initial fee was paid (previously reported on line 5 of the initial fee form).	
7. If line 5 is greater than line 6, subtract line 6 from line 5, and enter the result. Otherwise enter "0."	
8. If line 6 is greater than line 5, subtract line 5 from line 6, and enter the result. Otherwise enter "0."	
9. If line 7 is greater than 0, multiply line 7 by last year's fee rate ($/ton) and enter the result here. This is the underpayment. Go to line 21.	
10. If line 8 is greater than 0, multiply line 8 by last year's fee rate ($/ton) and enter the result here. This is the overpayment. Go to line 21.	

RECONCILIATION (WHEN INITIAL FEES WERE BASED ON ESTIMATES FOR THE "PRECEDING" CALENDAR YEAR) Only complete lines 11-20 if you are paying the first annual fee and initial fees were based on estimated actual emissions for the calendar year preceding initial fee payment; otherwise skip to line 21. If completing this section, you will also need to complete sections D and E to report actual emissions for the calendar year preceding initial fee payment.	
11. Sum the actual emissions from section D (non-HAP) for the calendar year preceding initial fee payment and enter the result here.	
12. Sum the actual emissions from section E (HAP) for the calendar year preceding initial fee payment and enter the result here.	
13. Add lines 11 and 12 and enter the total here. These are total actual emissions for the calendar year preceding initial fee payment.	
14. Enter double counted emission from line 13 here. If none, enter "0."	
15. Subtract line 14 from line 13, round to the nearest ton, and enter the result here.	
16. Enter the total estimated actual emissions previously reported on line 5 of the initial fee form. These are estimated actual emissions for the calendar year preceding initial fee payment.	
17. If line 15 is greater than line 16, subtract line 16 from line 15, and enter the result here. Otherwise enter "0."	
18. If line 16 is greater than line 15, subtract line 15 from line 16, and enter the result here. Otherwise enter "0."	
19. If line 17 is greater than 0, multiply line 17 by last year's fee rate ($/ton) and enter the result here. This is the underpayment.	
20. If line 18 is greater than 0, multiply line 18 by last year's fee rate ($/ton) and enter the result on this line. This is the overpayment.	
EMISSION FEE CALCULATION	
21. Multiply line 5 (tons) by the current fee rate ($/ton) and enter the result here. This is the unadjusted emissions fee. Continue on to line 23.	$1,945.56
GHG FEE ADJUSTMENT	
22. If you are submitting an initial permit application and this is the first time you are paying fees, enter $2,236, otherwise enter "0". [Note that any updates to the initial application are covered under this one-time charge.]	0
23. Enter the number of permit modifications (or related permit actions) you have submitted to the permitting authority since you last paid fees. If none, skip to line 25.	0
24. Multiply the number in line 23 by $365 and enter the result.	0

25. If you have submitted a permit renewal application since the last time you paid fees enter \$520, otherwise enter "0"	0
26. Sum line 22, 24, and 25 and enter the result. This is the GHG fee adjustment	0
OTHER ADJUSTMENTS	
27. Add the total on line 21 and the total on line 26 and enter the result.	\$1,945.56
28. Enter any underpayment from line 9 or 19 here. Otherwise enter "0."	0
29. Enter any overpayment from line 10 or 20 here. Otherwise enter "0."	0
30. If line 28 is greater than "0," add it to line 27 and enter the result here. If line 29 is greater than "0," subtract this from line 27 and enter the result here. Otherwise enter the amount on line 27 here. This is the fee adjusted for over/underpayment.	\$1,945.56
31. Enter any credit for fee assessment error here. Otherwise, enter "0."	0
32. Subtract line 31 from line 30 and enter the result here. Stop here. This is the **TOTAL FEE (AFTER ADJUSTMENTS)** that you must remit to EPA.	\$1,945.56

ORIGIN ID:FMNA (505) 634-4316
TRISTEN RUYBALID
HARVEST FOUR CORNERS, LLC
1755 ARROYO DRIVE

BLOOMFIELD, NM 87413
UNITED STATES US

SHIP DATE: 13JUL22
ACTWGT: 0.50 LB
CAD: 113465079/INET4490

BILL SENDER

TO COLLECTIONS TEAM
US EPA OCFO_OC_ACAD_FCB
1300 PENNSYLVANIA AVE NW
MAIL CODE 2733R
WASHINGTON DC 20004
(202) 564-7593 REF:
INV:
PO: DEPT:

581J2/0A92/FE4A

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TRK# 7773 7794 9704
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Kayleigh Ruybalid

From: TrackingUpdates@fedex.com
Sent: Thursday, July 14, 2022 12:25 PM
To: Kayleigh Ruybalid
Subject: [EXTERNAL] FedEx Shipment 777377949704: Your package has been delivered

Hi. Your package was delivered Thu, 07/14/2022 at 2:19pm.

Delivered to 1300 PENNSYLVANIA AVE NW, WASHINGTON, DC 20004

OBTAIN PROOF OF DELIVERY

Personal Message

Los Mestenios TV Part 71 Form FF 2021 (Payment)

TRACKING NUMBER	777377949704
FROM	Harvest Four Corners, LLC 1755 Arroyo Drive Bloomfield, NM, US, 87413

TO	US EPA OCFO_OC_ACAD_FCB Collections Team 1300 Pennsylvania Ave NW Mail Code 2733R WASHINGTON, DC, US, 20004
SHIP DATE	Wed 7/13/2022 04:35 PM
PACKAGING TYPE	FedEx Envelope
ORIGIN	Bloomfield, NM, US, 87413
DESTINATION	WASHINGTON, DC, US, 20004
SPECIAL HANDLING	Deliver Weekday
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	0.50 LB
SERVICE TYPE	FedEx Standard Overnight

This tracking update has been requested by:

Company name:	Harvest Four Corners, LLC
Name:	Tristen Ruybalid
Email:	truybalid@harvestmidstream.com

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Please do not respond to this message. This email was sent from an unattended mailbox. This report was generated at approximately 1:25 PM CDT 07/14/2022.

All weights are estimated.

To track the latest status of your shipment, click on the tracking number above.

Standard transit is the date and time the package is scheduled to be delivered by, based on the selected service, destination and ship date. Limitations and exceptions may apply. Please see the FedEx Service Guide for terms and conditions of service, including the FedEx Money-Back Guarantee, or contact your FedEx Customer Support representative.

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Section 9

Certification of Truth, Accuracy and Completeness

A certification of truth, accuracy and completeness is provided in this section. Please see the following page.

United States Environmental Protection Agency

OMB No. 2060-0336, Expires 11/30/2022

Federal Operating Permit Program (40 CFR Part 71)

CERTIFICATION OF TRUTH, ACCURACY, AND COMPLETENESS (CTAC)

This form must be completed, signed by the "Responsible Official" designated for the facility or emission unit, and sent with each submission of documents (i.e., application forms, updates to applications, reports, or any information required by a part 71 permit).

A. Responsible Official

Name: (Last) Jones (First) Travis (MI) ____

Title EHS Manager

Street or P.O. Box 1111 Travis St

City Houston State TX ZIP 77002 - _____

Telephone (713) 289 - 2630 Ext. ______ Facsimile (____) ____ - ________

B. Certification of Truth, Accuracy and Completeness (to be signed by the responsible official)

I certify under penalty of law, based on information and belief formed after reasonable inquiry, the statements and information contained in these documents are true, accurate and complete.

Name (signed) ______________________

Name (typed) Travis Jones Date: 11 / 22 / 22