

DRAFT

**OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION**

MEMORANDUM

March 5, 2025

TO: Lee Warden, P.E., Permits and Engineering Group Manager

THROUGH: Phillip Martin, P.E., Engineering Manager, Existing Source Permits Section

THROUGH: Junru Wang, P.E., Existing Source Permits Section

FROM: Elijah Ecklund, E.I, Engineering Section, ROAT

SUBJECT: Evaluation of Application No. 2024-0721-O
ET Gathering & Processing LLC
Hadson Livingston Dehydration Station (SIC 4922/NAICS 486210)
Facility ID No: 6755
Latitude: 35.02233°N, Longitude: 98.30382°W
Section 6, Township 6N, Range 10W, Caddo County, Oklahoma
Directions: From the junction US-281 and US-62 in Anadarko, travel five (5) miles west on US-62, turn south on county road and travel for one and one-quarter (1 ¼) miles. The facility is on the east side of the road.

SECTION I. INTRODUCTION

ET Gathering & Processing LLC (ETGP or the applicant) has applied for an individual minor source operating permit for their Hadson Livingston Dehydration Station. The facility is currently operating under the General Permit for Oil and Gas Facilities (GP-OGF) Authorization No. 2008-427-O, issued on March 23, 2009.

ETGP has stated that the purpose of this application is to revise potential emissions from their glycol dehydration unit (DEHY1) to reflect an updated extended gas analysis. ETPG also request a separate limit allowing uncontrolled operation of the glycol dehydration unit for up to 200 hours per year. Furthermore, ETPG has updated emissions for the condensate storage tank (TANK1), which are based on the new AP-42 (6/20), Section 7.1 equations.

Based on data provided by ETGP, the facility has emissions of 0.17 TPY of NO_x, 0.14 TPY of CO, 80.12 TPY of VOC, and 4.57 TPY HAPs.

The total emissions from the facility are below the major source thresholds. This facility, therefore, qualifies for a “synthetic minor” permit because the controlled emissions of each of the criteria pollutants are below the major source threshold of 100 TPY and the HAP emissions are below the 10 TPY threshold for a single HAP and below the 25 TPY threshold for any combination of HAPs. On issuance, this permit will be a FESOP.

SECTION II. PROCESS DESCRIPTION

The facility is a natural gas gathering dehydration station. Natural gas is transported to the facility via a pipeline gathering system. The gas stream enters the facility through an inlet separator, where condensate, if present, and produced water are removed from the inlet stream. The liquids then flow from the inlet separator into the one (1) 300-bbl condensate storage tank (TANK1).

The glycol dehydration unit is used to remove water from the gas before the gas exits the facility. In the dehydration process, gas passes through the contactor vessel where water is absorbed by the glycol. The “rich” glycol containing water goes to the TEG reboiler, where heat is used to boil off the water. The heat in the reboiler is supplied by a 0.4-MMBTUH burner, which exhausts to the atmosphere (HEAT1). The dehydrator still vent (DEHY1) is equipped with a condenser to reduce VOC and HAP emissions.

SECTION III. EQUIPMENT

ID#	Description	Size/Rating	Control Equipment Type	Manufacture, Construction, or Modification Date	Subject to an NSPS or NESHAP Subpart
DEHY1	Dehydration Unit (Controlled)	10-MMSCFD	Condenser	After 7/8/2005	NESHAP HH
	Dehydration Unit (uncontrolled 200 hours)	10-MMSCFD	-		
HEAT1	Glycol Reboiler	0.4-MMBTUH	-	-	-
TANK1	Condensate Storage Tank	300-bbl	-	Before 8/23/2011	-
LOAD1	Condensate Truck Loading	-	-	-	-
FUG1	Fugitive Emissions	-	-	-	-
MSS	Maintenance, Startup, and Shutdown	-	-	-	-

SECTION IV. FACILITY-SPECIFIC OR REPRESENTATIVE SAMPLE

FACILITY-WIDE

The applicant did not request any emission changes for the tank flash and fugitive components from the last operating permit; therefore, no facility-specific or representative sample is needed for these units.

DEHYDRATION UNIT

Glycol Dehydrator Considerations	Yes	No
The facility submitted a facility-specific extended gas analysis of the inlet gas.	X	
The sample was no older than three (3) calendar years at the time of submittal.	X	

SECTION V. EMISSIONS

Unless otherwise stated, emissions are based on 8,760 hours per year of operation with combustion sources firing field-grade natural gas with a maximum sulfur content of 162 ppmv.

DEHYDRATION UNIT

Emission estimates from the TEG dehydration unit's regenerator vent and flash tank are based on the Gas Research Institute (GRI) program GLYCalc Version 4.0, an inlet gas analysis, and continuous operation. The dehydration unit is equipped with a flash tank on the rich glycol stream. Flash tank off-gasses are directed to the reboiler firebox with a 50% control efficiency. The dehydration unit's regenerator still vent is equipped with an air-cooled condenser, where vapors are captured. The vapors from the dehydration unit's regenerator still vent are routed through the condenser, with the uncondensed vapors from the condenser vented to the atmosphere. The dehydration unit's regenerator still vent emissions were calculated with an 80% overall control efficiency for VOC. Emissions from the regenerator vent include a safety factor of 100% to allow for variability in the composition of the natural gas stream.

Dehydration Unit

Parameter	Data
Type of Glycol	TEG
Dry Gas Flow Rate, MMSCFD	10.0
Glycol Pump Type	Gas
Lean Glycol Pump Design Capacity, gpm	1.5
Lean Glycol Recirculation Rate Input, gpm	1.5
Regenerator Vent	
Condenser Outlet Temperature, °F	100.0
Control Method	Condenser
Overall Control Efficiency, %	80.0
VOC Emissions, TPY	11.12
Flash Tank	
Flash Tank Temperature, °F	100.0
Flash Tank Pressure, psig	75.0
Control Method	Reboiler firebox
VOC Control Efficiency, %	50.0
VOC Emissions, TPY	7.19
Total Emissions, TPY	
VOC	36.60 ⁽¹⁾
Benzene	0.44
Toluene	2.06
Ethylbenzene	0.15
Xylene	1.25
n-Hexane	0.45
Total HAP	4.35

⁽¹⁾ Include a 100% safety factor (1+100%).

DEHY1 VOC and HAP Emissions during Uncontrolled Operation

Pollutant	Still Vent Emissions	Flash Tank Emissions	Uncontrolled	Total Uncontrolled Emissions	
	lb/hr	lb/hr	hours/year	lb/hr	TPY
VOC	12.69	3.28	200	15.97	1.60
n-Hexane	0.05	0.08	200	0.13	0.01
Benzene	0.23	0.01	200	0.24	0.02
Toluene	1.11	0.03	200	1.14	0.11

Pollutant	Still Vent Emissions	Flash Tank Emissions	Uncontrolled	Total Uncontrolled Emissions	
	lb/hr	lb/hr	hours/year	lb/hr	TPY
Ethylbenzene	0.08	<0.01	200	0.08	<0.01
Xylene	0.70	0.01	200	0.70	0.07
Total HAPs	2.17	0.13	200	2.30	0.22

REBOILER

Emissions are based on AP-42 (7/98), Section 1.4, a gas heating value of 1,020 BTU/SCF, and the rating shown in the second table.

Reboiler Emission Factors

ID#	NO _x	CO	VOC
	lb/MMSCF	lb/MMSCF	lb/MMSCF
HEAT1	100.0	84.0	5.5

Reboiler Emissions

ID#	Rating	NO _x		CO		VOC	
	MMBTUH	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
HEAT1	0.4	0.04	0.17	0.03	0.14	<0.01	0.01

TANKS

Working and breathing emissions from the condensate tank are calculated using AP-42 (6/20), Section 7.1. Flashing emissions were calculated using the Vasquez-Beggs Equation.

Tank Emissions

Parameter	TANK 1 Data
Throughput, gal/yr	18,900
Liquid in Tank(s)	Condensate/Oil
Working/Breathing Method/Tool	AP-42 (6/20), Section 7.1
Flash Calculation Method/Tool	Vasquez-Beggs Equation
Turnover Factor (K _N)	1.00
Working/Breathing Emissions, TPY	0.62
Flashing Emissions, TPY	38.94
Control Type	-
Total VOC Emissions, TPY	39.56

LOADING

Emissions from loading condensate into tank trucks were estimated using AP-42 (6/08), Section 5.2, Equation 1, and the parameters listed in the table below.

Loading Parameters and Emissions

Parameter	LOAD1
Liquids Loaded	Condensate/Oil
Throughput, gal/yr	18,900
Saturation Factor	0.60
Temp., °F	62.56

Parameter	LOAD1
TVP, psia	6.40
MW, lb/lbmol	66
VOC, wt. %	100
Emission Factor, lb/10 ³ gal ⁽¹⁾	6.043
Control Method	-
VOC Emitted at Truck, TPY	0.06

⁽¹⁾ Final factor considering any VOC reduction stated for methane/ethane.

FUGITIVES

Emissions from fugitive equipment leaks (FUG1) are based on EPA's "Protocol for Equipment Leak Emission Estimates" (11/95, EPA-453/R-95-017), an estimated number of components, and the VOC (C₃₊) and HAP content of the materials handled.

Fugitive Emissions

ID#	VOC, TPY
FUG1	2.04

MAINTENANCE, STARTUPS, AND SHUTDOWN

Maintenance, startup, and shutdown (MSS) events consist of pipeline pigging and purging activities, and maintenance activities from various processes. Emissions are based on an estimated number of events, an estimated volume of vapors released, and an estimated VOC content of the vapors from each type of activity.

Maintenance, Startup, and Shutdown Emissions

ID#	VOC, TPY
MSS	0.25

FACILITY-WIDE EMISSIONS

Facility-Wide Emissions

ID#	Description	NO _x	CO	VOC	HAPs
		TPY	TPY	TPY	TPY
DEHY1	10-MMSCFD Dehydration Unit (Controlled)	-	-	36.60	4.35
	10-MMSCFD Dehydration Unit (Uncontrolled 200 hours)	-	-	1.60	0.22
HEAT1	0.4-MMBTUH Glycol Reboiler	0.17	0.14	0.01	-
TANK1	300-bbl Condensate Tank	-	-	39.56	-
LOAD1	Condensate Loading	-	-	0.06	-
FUG1	Fugitive Emissions	-	-	2.04	-
MSS	Maintenance, Startup, and Shutdown Events	-	-	0.25	-
Total Emissions		0.17	0.14	80.12	4.57
Emissions from Authorization No. 2008-427-O		0.17	0.14	64.83	-
Change in Emissions		0.00	0.00	15.29	4.57

HAP EMISSIONS

The dehydration unit will emit the HAP compounds listed below from the glycol still vent and flash tank. HAP emissions are calculated using GRI-GLYCalc.

Controlled Dehydrator HAP Emissions

Pollutant	Controlled Still Vent	Controlled Flash Tank	Safety Factor	Total Controlled Emissions	
	TPY	TPY		lb/hr	TPY
n-Hexane	0.05	0.18	100%	0.10	0.45
Benzene	0.20	0.02	100%	0.10	0.44
Toluene	0.97	0.06	100%	0.47	2.06
Ethylbenzene	0.07	<0.01	100%	0.03	0.15
Xylene	0.61	0.01	100%	0.29	1.25
Total HAPs	1.90	0.28	100%	1.00	4.35

Uncontrolled Dehydrator HAP Emissions

Pollutant	Uncontrolled Still Vent	Uncontrolled Flash Tank	Uncontrolled	Total Uncontrolled Emissions	
	lb/hr	lb/hr	hrs/yr	lb/hr	TPY
n-Hexane	0.05	0.08	200	0.13	0.01
Benzene	0.23	0.01	200	0.24	0.02
Toluene	1.11	0.03	200	1.14	0.11
Ethylbenzene	0.08	<0.01	200	0.08	<0.01
Xylene	0.70	0.01	200	0.70	0.07
Total HAPs	2.17	0.13	200	2.30	0.22

The total HAP emissions from the ETGP equipment at the facility is 4.59 TPY. Therefore, the individual and the total emissions of HAPs do not exceed the major source thresholds of 10/25 TPY.

SECTION VI. OKLAHOMA AIR POLLUTION CONTROL RULES

OAC 252:100-1 (General Provisions)

[Applicable]

Subchapter 1 includes definitions but there are no regulatory requirements.

OAC 252:100-2 (Incorporation by Reference)

[Applicable]

This subchapter incorporates by reference applicable provisions of Title 40 of the Code of Federal Regulations listed in OAC 252:100, Appendix Q. These requirements are addressed in the “Federal Regulations” section.

OAC 252:100-3 (Air Quality Standards and Increments)

[Applicable]

Subchapter 3 enumerates the primary and secondary ambient air quality standards and the significant deterioration increments. At this time, all of Oklahoma is in “attainment” of these standards.

OAC 252:100-5 (Registration, Emissions Inventory and Annual Operating Fees)

[Applicable]

Subchapter 5 requires sources of air contaminants to register with Air Quality, file emission inventories annually, and pay annual operating fees based upon total annual emissions of regulated

pollutants. Required annual information (Turn-Around Document) shall be provided to Air Quality.

OAC 252:100-7 (Permits for Minor Facilities)

[Applicable]

Subchapter 7 sets forth the permit application fees and the basic substantive requirements of permits for minor facilities. Since controlled criteria pollutant emissions are less than 100 TPY for each pollutant, and emissions of HAP will not exceed 10 TPY for any one HAP or 25 TPY for any aggregate of HAP, the facility is defined as a “synthetic minor” source.

OAC 252:100-9 (Excess Emissions Reporting Requirements)

[Applicable]

Except as provided in OAC 252:100-9-7(a)(1), the owner or operator of a source of excess emissions shall notify the Director as soon as possible, but no later than 4:30 p.m. the following working day of the first occurrence of excess emissions in each excess emissions event. No later than thirty (30) calendar days after the start of any excess emission event, the owner or operator of an air contaminant source from which excess emissions have occurred shall submit a report for each excess emissions event describing the extent of the event and the actions taken by the owner or operator in response to this event. Request for mitigation, as described in OAC 252:100-9-8, shall be included in the excess emissions event report. Additional reporting may be required in the case of ongoing emission events and in the case of excess emissions reporting required by 40 CFR Parts 60, 61, or 63.

OAC 252:100-13 (Open Burning)

[Applicable]

Open burning of refuse and other combustible material is prohibited except as authorized in the specific examples and under the conditions listed in this subchapter.

OAC 252:100-19 (Particulate Matter)

[Applicable]

Section 19-4 regulates emissions of PM from new and existing fuel-burning equipment, with emission limits based on maximum design heat input rating. Fuel-burning equipment is defined in OAC 252:100-19 as any internal combustion engine or gas turbine, or other combustion device used to convert the combustion of fuel into usable energy. Thus, the reboiler is subject to the requirements of this subchapter. OAC 252:100, Appendix C specifies a PM emission limitation of 0.60 lb/MMBTU for all equipment at this facility with a heat input rating of 10 MMBTUH or less. This permit requires the use of natural gas for all fuel-burning equipment to ensure compliance with Subchapter 19.

ID #	Equipment	Maximum Heat Input (MMBTUH)	Emissions (lb/MMBTU)	
			Appendix C	Potential
HEAT1	Dehydration Boiler	0.4	0.60	<0.01

OAC 252:100-25 (Visible Emissions and Particulates)

[Applicable]

No discharge of greater than 20% opacity is allowed except for short-term occurrences that consist of not more than one six-minute period in any consecutive 60 minutes, not to exceed three such periods in any consecutive 24 hours. In no case shall the average of any six-minute period exceed 60% opacity. When burning natural gas, there is very little possibility of exceeding these standards.

OAC 252:100-29 (Fugitive Dust)

[Applicable]

No person shall cause or permit the discharge of any visible fugitive dust emissions beyond the property line on which the emissions originated in such a manner as to damage or to interfere with the use of adjacent properties, or cause air quality standards to be exceeded, or to interfere with the maintenance of air quality standards. Under normal operating conditions, this facility has negligible potential to violate this requirement; therefore, it is not necessary to require specific precautions to be taken.

OAC 252:100-31 (Sulfur Compounds)

[Applicable]

Part 2 limits the ambient air concentration of H₂S emissions from any facility to 0.2 ppm (24-hour average) at standard conditions which is equivalent to 283 µg/m³. Based on modeling conducted for the general permit for oil and gas facilities, the ambient impacts of H₂S, from oil and gas facilities combusting natural gas with a maximum H₂S content of 162 ppmv and storing condensate or sweet crude oil, will be in compliance with the ambient air concentration limit.

Part 5 limits sulfur dioxide emissions from new petroleum or natural gas process equipment (constructed after July 1, 1972). For gaseous fuels the limit is 0.2 lb/MMBTU heat input averaged over 3 hours. For fuel gas having a gross calorific value of 1,000 Btu/SCF, this limit corresponds to fuel sulfur content of 1,203 ppmv. Gas produced from oil and gas wells having 162 ppmv or less total sulfur will ensure compliance with Subchapter 31. The permit requires the use of pipeline-grade natural gas or field gas with a maximum sulfur content of 162 ppmv for all fuel-burning equipment to ensure compliance with Subchapter 31.

OAC 252:100-33 (Nitrogen Oxides)

[Not Applicable]

This subchapter limits NO_x emissions from new fuel-burning equipment with rated heat input greater than or equal to 50 MMBTUH. There are no emission units that exceed the 50 MMBTUH threshold.

OAC 252:100-35 (Carbon Monoxide)

[Not Applicable]

None of the following affected processes are located at this facility: gray iron cupola, blast furnace, basic oxygen furnace, petroleum catalytic cracking unit, or petroleum catalytic reforming unit.

OAC 252:100-37 (Volatile Organic Compounds)

[Applicable]

Part 3 requires storage tanks constructed after December 28, 1974, with a capacity of 400 gallons or more and storing a VOC with a vapor pressure greater than 1.5 psia at maximum storage temperature to be equipped with a permanent submerged fill pipe or with an organic vapor recovery system. The one 300-bbl condensate storage tank at this facility is equipped with a submerged fill pipe and is therefore in compliance.

Part 3 requires loading facilities with a throughput equal to or less than 40,000 gallons per day to be equipped with a system for submerged filling tank trucks or trailers if the capacity of the vehicle is greater than 200 gallons. This facility does not have the physical equipment (loading arm and pump) to conduct this type of loading. Therefore, this requirement is not applicable.

Part 5 limits the organic solvent content of coating of parts and products. Any painting operation will involve maintenance coatings of buildings and equipment and emit less than 100 pounds per day of VOCs and so is exempt.

Part 7 requires fuel-burning and refuse-burning equipment to be operated to minimize emissions of VOC. The equipment at this location is subject to this requirement.

Part 7 requires all effluent water separator openings that receive water containing more than 200 gallons per day of any VOC, to be sealed or the separator to be equipped with an external floating roof or a fixed roof with an internal floating roof or a vapor recovery system. No effluent water separators are located at this facility.

OAC 252:100-42 (Toxic Air Contaminants (TAC)) [Applicable]

This subchapter regulates TAC that are emitted into the ambient air in areas of concern (AOC). Any work practice, material substitution, or control equipment required by the Department prior to June 11, 2004, to control a TAC, shall be retained, unless a modification is approved by the Director. Since no AOC has been designated there are no specific requirements for this facility at this time.

OAC 252:100-43 (Testing, Monitoring, and Recordkeeping) [Applicable]

This subchapter provides general requirements for testing, monitoring, and record keeping. It applies to any testing, monitoring, or recordkeeping activity conducted at any stationary source. To determine compliance with emissions limitations or standards, the Air Quality Director may require the owner or operator of any source in the state of Oklahoma to install, maintain, and operate monitoring equipment or to conduct tests, including stack tests, of the air contaminant source. All required testing must be conducted by methods approved by the Air Quality Director and under the direction of qualified personnel. A notice-of-intent to test and a testing protocol shall be submitted to Air Quality at least 30 days prior to any EPA Reference Method stack tests. Emissions and other data required to demonstrate compliance with any federal or state emission limit or standard, or any requirement set forth in a valid permit shall be recorded, maintained, and submitted as required by this subchapter, an applicable rule, or permit requirement. Data from any required testing or monitoring not conducted in accordance with the provisions of this subchapter shall be considered invalid. Nothing shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed.

SECTION VII. FEDERAL REGULATIONS

NSPS, 40 CFR Part 60 [Not Applicable]

Subpart Dc, Small Industrial-Commercial-Institutional Steam Generating Units. This subpart affects steam generating units constructed after June 9, 1989, and with capacity between 10 and 100 MMBTUH. The boiler of this facility is not a steam generating unit, as defined in this subpart, therefore not applicable to this subpart.

Subpart Kb, Volatile Organic Liquid Storage Vessels. VOL Storage Vessels. This subpart regulates hydrocarbon storage tanks larger than 19,813 gallons capacity and built after July 23, 1984. The one (1) 300-bbl Tank does not reach this threshold, therefore not applicable to this subpart.

Subpart GG, Stationary Gas Turbines. There is no affected equipment at this facility, therefore not applicable to this subpart.

Subpart VV, Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry (SOCMI). This facility is not a SOCMI plant, therefore not applicable to this subpart.

Subpart KKK, Equipment Leaks of VOC from Onshore Natural Gas Processing Plans. The facility does not engage in natural gas processing, therefore not applicable to this subpart.

Subpart LLL, SO₂ Emissions from Onshore Natural Gas Processing. This facility does not have a sweetening unit, therefore not applicable to this subpart.

Subpart JJJJ, Stationary Spark Ignition Internal Combustion Engines. This subpart promulgates emission standards for all new SI engines ordered after June 12, 2006, and all SI engines modified or reconstructed after June 12, 2006, regardless of size. There are no engines at this facility, therefore not applicable to this subpart.

Subpart OOOO, Crude Oil and Natural Gas Facilities. This subpart affects the following sources that commence construction, reconstruction, or modification after August 23, 2011, and on or before September 18, 2015:

- (a) Each gas well affected facility, which is a single natural gas well.
- (b) Each centrifugal compressor affected facility, which is a single centrifugal compressor using wet seals that is located between the wellhead and the point of custody transfer to the natural gas transmission and storage segment.
- (c) Each reciprocating compressor affected facility, which is a single reciprocating compressor located between the wellhead and the point of custody transfer to the natural gas transmission and storage segment.
- (d) Each pneumatic controller affected facility, which is:
 - (1) For the oil production segment (between the wellhead and the point of custody transfer to an oil pipeline): a single continuous bleed natural gas-driven pneumatic controller operating at a natural gas bleed rate greater than 6 SCFH.
 - (2) For the natural gas production segment (between the wellhead and the point of custody transfer to the natural gas transmission and storage segment and not including natural gas processing plants): a single continuous bleed natural gas-driven pneumatic controller operating at a natural gas bleed rate greater than 6 SCFH.
 - (3) For natural gas processing plants: a single continuous bleed natural gas-driven pneumatic controller.
- (e) Each storage vessel affected facility, which is a single storage vessel located in the oil and natural gas production segment, natural gas processing segment or natural gas transmission and storage segment, that contains an accumulation of crude oil, condensate, intermediate hydrocarbon liquids, or produced water and has the potential for VOC emissions equal to or greater than 6 TPY.
- (f) The group of all equipment, except compressors, within a process unit located at an onshore natural gas processing plant is an affected facility.
- (g) Sweetening units located at onshore natural gas processing plants that process natural gas produced from either onshore or offshore wells.

There are no gas wells at this facility, there are no natural gas-driven pneumatic controllers operating at a natural gas bleed rate greater than 6 SCFH at this facility, this facility is not a gas plant, and there are no sweetening units at this facility. The condensate tank was constructed before August 23, 2011, and is therefore not subject to this subpart.

Subpart OOOOa, Crude Oil and Natural Gas Facilities. The affected facility to which this subpart applies are the following that have commenced construction, modification, or reconstruction after September 18, 2015, and on or before December 6, 2022:

- (a) Each well affected facility, which is a single well that conducts a well completion operation following hydraulic fracturing or refracturing.
- (b) Each centrifugal compressor affected facility, which is a single centrifugal compressor using wet seals. A centrifugal compressor located at a well site, or an adjacent well site and servicing more than one well site, is not an affected facility under this subpart.
- (c) Each reciprocating compressor affected facility, which is a single reciprocating compressor. A reciprocating compressor located at a well site, or an adjacent well site and servicing more than one well site, is not an affected facility under this subpart.
- (d) Each pneumatic controller affected facility:
 - (1) Each pneumatic controller affected facility not located at a natural gas processing plant, which is a single continuous bleed natural gas-driven pneumatic controller operating at a natural gas bleed rate greater than 6 SCFH.
 - (2) Each pneumatic controller affected facility located at a natural gas processing plant, which is a single continuous bleed natural gas-driven pneumatic controller.
- (e) Each storage vessel affected facility, which is a single storage vessel with the potential for VOC emissions equal to or greater than 6 TPY as determined according to §60.5365a(e).
- (f) The group of all equipment within a process unit located at an onshore natural gas processing plant is an affected facility. Equipment within a process unit of an affected facility located at onshore natural gas processing plants are exempt from this subpart if they are subject to and controlled according to Subparts VVa, GGG, or GGGa.
- (g) Sweetening units located at onshore natural gas processing plants that process natural gas produced from either onshore or offshore wells.
- (h) Each pneumatic pump affected facility:
 - (1) For natural gas processing plants, each pneumatic pump affected facility, which is a single natural gas-driven diaphragm pump.
 - (2) For well sites, each pneumatic pump affected facility, which is a single natural gas-driven diaphragm pump.
- (i) The collection of fugitive emissions components at a well site, as defined in §60.5430a, is an affected facility, except as provided in § 60.5365a(i)(2).
- (j) The collection of fugitive emissions components at a compressor station, as defined in § 60.5430a, is an affected facility.

There are no gas wells at this facility, there are no natural gas-driven pneumatic controllers operating at a natural gas bleed rate greater than 6 SCFH at this facility, this facility is not a gas plant, and there are no sweetening units at this facility. The condensate tank was constructed before the applicability date and is therefore not subject to this subpart.

Subpart OOOOb, Crude Oil and Natural Gas Facilities. NSPS Subpart OOOOb was signed on November 30, 2023, and became effective on May 7, 2024. NSPS OOOOb is applicable to affected facilities in the crude oil and natural gas source category that commenced construction, modification, or reconstruction on or after December 6, 2022. The facility commenced operation prior to December 6, 2022, and with no subsequent modifications or reconstructed after the applicability date. Therefore, the facility is not subject to the subpart.

NESHAP, 40 CFR Part 61

[Not Applicable]

There are no emissions of any of the regulated pollutants: arsenic, asbestos, beryllium, benzene, coke oven emissions, mercury, radionuclides, or vinyl chloride except for trace amounts of benzene. Subpart J (Equipment Leaks of Benzene) concerns only process streams which contain more than 10% benzene by weight. Analysis of Oklahoma natural gas indicates a maximum benzene content of less than 1%.

NESHAP, 40 CFR 63

[Subpart HH Applicable]

Subpart HH, Oil and Natural Gas Production Facilities. This subpart applies to TEG dehydration units at area sources and affected emission points that are located at facilities that are major sources of HAP emissions and either process, upgrade, or store hydrocarbons prior to the point of custody transfer or prior to which the natural gas enters the natural gas transmission and storage source category. For the purposes of this subpart, natural gas enters the natural gas transmission and storage source category after the natural gas processing plant, when present. If no natural gas processing plant is present, natural gas enters the natural gas transmission and storage source category after the point of custody transfer. The TEG dehydration unit was not constructed prior to July 8, 2005, and is not located within an Urban-1 County, as such, it is considered an affected new source. Despite this, it is exempt from the requirements of § 63.764(d)(1) or § 63.764(d)(2) since the actual average emissions of benzene from the glycol dehydration unit process vents to the atmosphere are less than 1 TPY. However, the facility must maintain records of the de minimis determination as required in § 63.774(d)(1). Compliance details for this glycol dehydration unit are listed in the specific conditions.

Subpart HHH, Natural Gas Transmission and Storage. This subpart affects Natural Gas Transmission and Storage Facilities. It applies to emission points that are located at facilities that are major sources of HAP emissions, as defined in this subpart, and that transport or store natural gas prior to entering the pipeline to a local distribution company or to a final end user. The affected source is each glycol dehydration unit. The facility is not a major source of HAP emissions, therefore not applicable.

Subpart ZZZZ, Reciprocating Internal Combustion Engines (RICE). This subpart affects RICE that are located at a major source and at area sources. Owners and operators of new or reconstructed engines at area sources and of new or reconstructed engines with a site rating equal to or less than 500 HP located at a major source (except new or reconstructed 4-stroke lean-burn engines with a site rating greater than or equal to 250 HP and less than or equal to 500 HP located at a major source) must meet the requirements of Subpart ZZZZ by complying with either 40 CFR

Part 60 Subpart IIII (for CI engines) or 40 CFR Part 60 Subpart JJJJ (for SI engines). There are no engines at this facility, therefore not applicable to this subpart.

SECTION VIII. COMPLIANCE

COMPLIANCE AND ENFORCEMENT CASE

There are no active Air Quality compliance or enforcement issues concerning this facility.

INSPECTION

On September 5, 2024, a full compliance evaluation was conducted on-site by DEQ Enforcement Inspectors Cynthia Andrade-Lerma, Jennifer McCutcheon, and Ellie Howell. They were accompanied by Jason Lee and Philip Willis who represented ET Gathering. No violations were discovered. Since the modification did not increase the criteria pollutants by 50 TPY, an inspection was not necessary for the issuance of the permit.

SECTION IX. ADMINISTRATIVE

TIER CLASSIFICATION AND PUBLIC REVIEW

This application has been determined to be **Tier I** based on the request for a modification of a minor operating permit that did not undergo the FESOP Enhanced NSR Process.

The draft permit will undergo public notice on the DEQ's web site as required in OAC 252:4-7-13(g). The public, tribal governments, and the EPA have 30 days to comment on the draft permit. Permits available for public review and comment are found at this location: <https://www.deq.ok.gov/permits-for-public-review/>.

PREVIOUS PERMITS

The facility is currently operating under the GP-OGF Authorization No. 2008-427-O, issued on March 23, 2009. On issuance of this FESOP (2024-0721-O), all previous Air Quality authorizations and/or permits will be superseded and cancelled.

FEE PAID

A fee of \$750 for an individual minor source operating permit was paid.

SECTION X. SUMMARY

The facility is constructed as described in the permit application. Ambient air quality standards are not threatened at this site. There are no active Air Quality compliance or enforcement issues that would prevent issuance of the permit. Issuance of the FESOP is recommended, contingent on public review.

**PERMIT TO OPERATE
AIR POLLUTION CONTROL FACILITY
SPECIFIC CONDITIONS**

**ET Gathering & Processing LLC
Hadson Livingston Dehydration Station**

FESOP No. 2024-0721-O

The permittee is authorized to operate in conformity with the specifications submitted to Air Quality on July 15, 2024. The Evaluation Memorandum dated March 5, 2025, explains the derivation of applicable permit requirements and estimates of emissions; however, it does not contain operating limitations or permit requirements. Continuing operations under this permit constitutes acceptance of, and consent to, the conditions contained herein:

1. Points of emissions and emissions limitations for each point:

EU ID	Source	NO _x		CO		VOC		HAPs
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	TPY
DEHY1	10-MMSCFD Dehydration Unit (Controlled)	-	-	-	-	8.36	36.60	4.36
	10-MMSCFD Dehydration Unit (Uncontrolled 200 hours)	-	-	-	-	15.97	1.60	0.23
HEAT1	0.4-MMBTUH Glycol Reboiler	-	0.17	-	0.14	-	0.01	-
TANK1	300-bbl Condensate Storage Tank	-	-	-	-	-	39.56	-
LOAD1	Condensate Loading	-	-	-	-	-	0.06	-
MSS	Maintenance, Startup, and Shutdown Events	-	-	-	-	-	0.25	-

2. The facility is authorized to operate continuously (24 hours per day, every day of the year).
3. The fuel-burning equipment shall be fired with pipeline grade natural gas or other gaseous fuel with a sulfur content less than 162 ppmv. Compliance can be shown by the following methods: for pipeline grade natural gas, a current gas company bill; for other gaseous fuel, a current lab analysis, stain-tube analysis, gas contract, tariff sheet, or other approved methods. Compliance shall be demonstrated at least once each calendar year.
4. The glycol dehydration unit shall be installed and operated as follows:
- Maximum throughput of natural gas (monthly average) shall be no greater than 10-MMSCFD.
 - Glycol circulation rate shall be 1.5 gallons/minute (GPM) or less.
 - The glycol dehydrator still vent shall be equipped with a condenser.
 - All emissions from the glycol dehydration unit's still vent shall be routed to the condenser, with the uncondensed vapors from the condenser routed to the atmosphere (overall control efficiency of 80%), except as allowed by Specific Condition No. 4(g).
 - The glycol dehydrator shall be equipped with a flash tank on the rich glycol stream.
 - The off-gasses from the flash tank shall be routed to the firebox (50% control efficiency), except as allowed by Specific Condition No. 4(g).

- g. The glycol dehydration unit may be operated up to 200 hours (12 month rolling total) without emissions controls.
- h. The permittee shall monitor and record the lean glycol circulation rate at least once a month. When three consecutive months show no exceedance of the limit, the frequency may be reduced to quarterly. Upon any showing of non-compliance, the monitoring and recordkeeping frequency shall revert to monthly. With each inspection the lean glycol circulation rate shall be recorded as follows:

Circulation rate, as found (gal/min, strokes/min)	_____
Circulation rate, as left (gal/min, strokes/min)	_____
Date of inspection	_____
Inspected by	_____

The requirement to monitor and record glycol circulation rate shall not apply if the pump capacity does not exceed 1.5 GPM. If so, the manufacturer's rating or the performance data for the model of pump that verifies the maximum pump rate at any operational conditions shall be maintained and available for inspection.

- 5. The condensate tank shall be equipped with a submerged fill pipe. The facility condensate throughput shall not exceed 18,900 gallons (based on a 12-month rolling total).
- 6. The permittee shall comply with all applicable requirements of the NESHAP for Oil and Natural Gas Production, Subpart HH, for each affected dehydration unit including but not limited to the following:
 - a. An owner or operator of a glycol dehydration unit that meets the exemption criteria in §63.764(e)(1) shall maintain the records specified in §63.774(d)(1), as appropriate, for that glycol dehydration unit.
- 7. The permittee shall maintain records of operations as listed below. These records shall be maintained on-site or at a local field office for at least five years after the date of recording and shall be provided to regulatory personnel upon request.
 - a. For the fuels burned, maintain the appropriate document(s) as described in Specific Condition No. 3.
 - b. Total condensate throughput (monthly and 12-month rolling total).
 - c. Natural gas throughput of the dehydration unit, MMSCFD (monthly average).
 - d. Glycol pump circulation rate (monthly / quarterly) if applicable, based on Specific Condition No. 4(h).
 - e. Record of number of hours when glycol dehydration unit operates without controls (monthly and 12-month rolling total).
 - f. Records required under NESHAP 40 CFR Part 63, Subpart HH.
- 8. Upon issuance, FESOP No. 2024-0721-O replaces and supersedes all previous Air Quality authorizations and/or permits issued to this facility, which are now cancelled.

**MINOR SOURCE PERMIT TO OPERATE / CONSTRUCT
AIR POLLUTION CONTROL FACILITY
STANDARD CONDITIONS
(February 13, 2020)**

A. The issuing Authority for the permit is the Air Quality Division (AQD) of the Oklahoma Department of Environmental Quality (DEQ) in accordance with and under the authority of the Oklahoma Clean Air Act. The permit does not relieve the holder of the obligation to comply with other applicable federal, state, or local statutes, regulations, rules, or ordinances. This specifically includes compliance with the rules of the other Divisions of DEQ: Land Protection Division and Water Quality Division.

B. A duly issued construction permit or authorization to construct or modify will terminate and become null and void (unless extended as provided in OAC 252:100-7-15(g)) if the construction is not commenced within 18 months after the date the permit or authorization was issued, or if work is suspended for more than 18 months after it is commenced. [OAC 252:100-7-15(f)]

C. The recipient of a construction permit shall apply for a permit to operate (or modified operating permit) within 180 days following the first day of operation. [OAC 252:100-7-18(a)]

D. Unless specified otherwise, the term of an operating permit shall be unlimited.

E. Notification to the Air Quality Division of DEQ of the sale or transfer of ownership of this facility is required and shall be made in writing by the transferor within 30 days after such date. A new permit is not required. [OAC 252:100-7-2(f)]

F. The following limitations apply to the facility unless covered in the Specific Conditions:

1. No person shall cause or permit the discharge of emissions such that National Ambient Air Quality Standards (NAAQS) are exceeded on land outside the permitted facility. [OAC 252:100-3]
2. All facilities that emit air contaminants are required to file an emission inventory and pay annual operating fees based on the inventory. Instructions are available on the Air Quality section of the DEQ web page. www.deq.ok.gov [OAC 252:100-5]
3. Deviations that result in emissions exceeding those allowed in this permit shall be reported consistent with the requirements of OAC 252:100-9, Excess Emission Reporting Requirements. [OAC 252:100-9]
4. Open burning of refuse and other combustible material is prohibited except as authorized in the specific examples and under the conditions listed in the Open Burning subchapter. [OAC 252:100-13]
5. No particulate emissions from new fuel-burning equipment with a rated heat input of 10 MMBTUH or less shall exceed 0.6 lbs/MMBTU. [OAC 252:100-19]
6. No discharge of greater than 20% opacity is allowed except for short-term occurrences which consist of not more than one six-minute period in any consecutive 60 minutes, not to exceed three such periods in any consecutive 24 hours. In no case shall the average of any six-minute period exceed 60% opacity. [OAC 252:100-25]

7. No visible fugitive dust emissions shall be discharged beyond the property line on which the emissions originate in such a manner as to damage or to interfere with the use of adjacent properties, or cause air quality standards to be exceeded, or interfere with the maintenance of air quality standards. [OAC 252:100-29]
8. No sulfur oxide emissions from new gas-fired fuel-burning equipment shall exceed 0.2 lbs/MMBTU. No existing source shall exceed the listed ambient air standards for sulfur dioxide. [OAC 252:100-31]
9. Volatile Organic Compound (VOC) storage tanks built after December 28, 1974, and with a capacity of 400 gallons or more storing a liquid with a vapor pressure of 1.5 psia or greater under actual conditions shall be equipped with a permanent submerged fill pipe or with an organic material vapor-recovery system. [OAC 252:100-37-15(b)]
10. All fuel-burning equipment shall at all times be properly operated and maintained in a manner that will minimize emissions of VOCs. [OAC 252:100-37-36]

G. Any owner or operator subject to provisions of NSPS shall provide written notification as follows: [40 CFR 60.7 (a)]

1. A notification of the date construction (or reconstruction as defined under §60.15) of an affected facility is commenced postmarked no later than 30 days after such date. This requirement shall not apply in the case of mass-produced facilities which are purchased in completed form.
2. A notification of any physical or operational change to an existing facility which may increase the emission rate of any air pollutant to which a standard applies, unless that change is specifically exempted under an applicable subpart or in §60.14(e). This notice shall be postmarked 60 days or as soon as practicable before the change is commenced and shall include information describing the precise nature of the change, present and proposed emission control systems, productive capacity of the facility before and after the change, and the expected completion date of the change. The Administrator may request additional relevant information subsequent to this notice.
3. A notification of the actual date of initial start-up of an affected facility postmarked within 15 days after such date.
4. If a continuous emission monitoring system is included in the construction, a notification of the date upon which the test demonstrating the system performance will commence, along with a pretest plan, postmarked no less than 30 days prior to such a date.

H. Any owner or operator subject to provisions of NSPS shall maintain records of the occurrence and duration of any start-up, shutdown, or malfunction in the operation of an affected facility or any malfunction of the air pollution control equipment. [40 CFR 60.7 (b)]

I. Any owner or operator subject to the provisions of NSPS shall maintain a file of all measurements and other information required by this subpart recorded in a permanent file suitable for inspection. This file shall be retained for at least five years following the date of such measurements, maintenance, and records. [40 CFR 60.7 (f)]

J. Any owner or operator subject to the provisions of NSPS shall conduct performance test(s) and furnish to AQD a written report of the results of such test(s). Test(s) shall be conducted within 60 days after achieving the maximum production rate at which the facility will be operated, but not later than 180 days after initial start-up. [40 CFR 60.8]



PERMIT

AIR QUALITY DIVISION
STATE OF OKLAHOMA
DEPARTMENT OF ENVIRONMENTAL QUALITY
707 N. ROBINSON, SUITE 4100
P.O. BOX 1677
OKLAHOMA CITY, OKLAHOMA 73101-1677

FESOP No. 2024-0721-O

ET Gathering & Processing LLC

having complied with the requirements of the law, is hereby granted permission to operate the Hadson Livingston Dehydration Station, located Section 6, Township 6N, Range 10W, Caddo County, Oklahoma, subject to standard conditions dated February 13, 2020, and specific conditions, both attached.

DRAFT

Lee Warden, P.E.
Permits and Engineering Group Manager

Date Issued

Brian De Luca
ET Gathering & Processing LLC
P.O. Box 24300, MC LS700
Oklahoma City, OK 73124

SUBJECT: FESOP No. **2024-0721-O**
ET Gathering & Processing LLC
Hadson Livingston Dehydration Station
Facility ID: 6755
Section 6, Township 6N, Range 10W, Caddo County, Oklahoma

Dear Brian De Luca:

Enclosed is the permit authorizing the operation of the facility referenced above. Please note that this permit is issued subject to standard and specific conditions, which are attached. These conditions must be carefully followed since they define the limits of the permit and will be confirmed by periodic inspections.

Also note that you are required to annually submit an emissions inventory for this facility. An emissions inventory must be completed through DEQ's electronic reporting system by April 1st of every year. Any questions concerning the submittal process should be referred to the Emissions Inventory Staff at (405) 702-4100.

Thank you for your cooperation. If you have any questions, please refer to the permit number above and contact me at Elijah.Ecklund@deq.ok.gov or by phone at (918) 293-1622.

Sincerely,

Elijah Ecklund

Elijah Ecklund
Engineering Section
AIR QUALITY DIVISION

Enclosures: AQD Acronym

Department of Environmental Quality (DEQ)
Air Quality Division (AQD)
Acronym List
9-10-21

ACFM	Actual Cubic Feet per Minute	GACT	Generally Achievable Control Technology
AD	Applicability Determination	GAL	Gallon (gal)
AFRC	Air-to-Fuel Ratio Controller	GDF	Gasoline Dispensing Facility
API	American Petroleum Institute	GEP	Good Engineering Practice
ASTM	American Society for Testing and Materials	GHG	Greenhouse Gases
		GR	Grain(s) (gr)
BACT	Best Available Control Technology	H₂CO	Formaldehyde
BAE	Baseline Actual Emissions	H₂S	Hydrogen Sulfide
BBL	Barrel(s)	HAP	Hazardous Air Pollutants
BHP	Brake Horsepower (bhp)	HC	Hydrocarbon
BTU	British thermal unit (Btu)	HCFC	Hydrochlorofluorocarbon
		HFR	Horizontal Fixed Roof
C&E	Compliance and Enforcement	HON	Hazardous Organic NESHAP
CAA	Clean Air Act	HP	Horsepower (hp)
CAM	Compliance Assurance Monitoring	HR	Hour (hr)
CAS	Chemical Abstract Service		
CAAA	Clean Air Act Amendments	I&M	Inspection and Maintenance
CC	Catalytic Converter	IBR	Incorporation by Reference
CCR	Continuous Catalyst Regeneration	ICE	Internal Combustion Engine
CD	Consent Decree		
CEM	Continuous Emission Monitor	LAER	Lowest Achievable Emission Rate
CFC	Chlorofluorocarbon	LB	Pound(s) [Mass] (lb, lbs, lbm)
CFR	Code of Federal Regulations	LB/HR	Pound(s) per Hour (lb/hr)
CI	Compression Ignition	LDAR	Leak Detection and Repair
CNG	Compressed Natural Gas	LNG	Liquefied Natural Gas
CO	Carbon Monoxide or Consent Order	LT	Long Ton(s) (metric)
COA	Capable of Accommodating		
COM	Continuous Opacity Monitor	M	Thousand (Roman Numeral)
		MAAC	Maximum Acceptable Ambient Concentration
D	Day	MACT	Maximum Achievable Control Technology
DEF	Diesel Exhaust Fluid	MM	Prefix used for Million (Thousand-Thousand)
DG	Demand Growth	MMBTU	Million British Thermal Units (MMBtu)
DSCF	Dry Standard (At Standard Conditions) Cubic Foot (Feet)	MMBTUH	Million British Thermal Units per Hour (MMBtu/hr)
		MMSCF	Million Standard Cubic Feet (MMscf)
EGU	Electric Generating Unit	MMSCFD	Million Standard Cubic Feet per Day
EI	Emissions Inventory	MSDS	Material Safety Data Sheet
EPA	Environmental Protection Agency	MWC	Municipal Waste Combustor
ESP	Electrostatic Precipitator	MWe	Megawatt Electrical
EUG	Emissions Unit Group		
EUSGU	Electric Utility Steam Generating Unit	NA	Nonattainment
		NAAQS	National Ambient Air Quality Standards
FCE	Full Compliance Evaluation	NAICS	North American Industry Classification System
FCCU	Fluid Catalytic Cracking Unit	NESHAP	National Emission Standards for Hazardous Air Pollutants
FEL	Federally Enforceable Limit(s)		
FESOP	Federally Enforceable State Operating Permit	NH₃	Ammonia
FIP	Federal Implementation Plan		
FR	Federal Register		

NMHC	Non-methane Hydrocarbon	SCFM	Standard Cubic Feet per Minute
NGL	Natural Gas Liquids	SCR	Selective Catalytic Reduction
NO₂	Nitrogen Dioxide	SER	Significant Emission Rate
NO_x	Nitrogen Oxides	SI	Spark Ignition
NOI	Notice of Intent	SIC	Standard Industrial Classification
NSCR	Non-Selective Catalytic Reduction	SIP	State Implementation Plan
NSPS	New Source Performance Standards	SNCR	Selective Non-Catalytic Reduction
NSR	New Source Review	SO₂	Sulfur Dioxide
		SO_x	Sulfur Oxides
O₃	Ozone	SOP	Standard Operating Procedure
O&G	Oil and Gas	SRU	Sulfur Recovery Unit
O&M	Operation and Maintenance		
O&NG	Oil and Natural Gas	T	Tons
OAC	Oklahoma Administrative Code	TAC	Toxic Air Contaminant
OC	Oxidation Catalyst	TEG	Triethylene Glycol
		THC	Total Hydrocarbons
PAH	Polycyclic Aromatic Hydrocarbons	TPY	Tons per Year
PAE	Projected Actual Emissions	TRS	Total Reduced Sulfur
PAL	Plant-wide Applicability Limit	TSP	Total Suspended Particulates
Pb	Lead	TV	Title V of the Federal Clean Air Act
PBR	Permit by Rule		
PCB	Polychlorinated Biphenyls	µg/m³	Micrograms per Cubic Meter
PCE	Partial Compliance Evaluation	US EPA	U. S. Environmental Protection Agency
PEA	Portable Emissions Analyzer		
PFAS	Per- and Polyfluoroalkyl Substance	VFR	Vertical Fixed Roof
PM	Particulate Matter	VMT	Vehicle Miles Traveled
PM_{2.5}	Particulate Matter with an Aerodynamic Diameter <= 2.5 Micrometers	VOC	Volatile Organic Compound
PM₁₀	Particulate Matter with an Aerodynamic Diameter <= 10 Micrometers	VOL	Volatile Organic Liquid
POM	Particulate Organic Matter or Polycyclic Organic Matter	VRT	Vapor Recovery Tower
ppb	Parts per Billion	VRU	Vapor Recovery Unit
ppm	Parts per Million		
ppmv	Parts per Million Volume	YR	Year
ppmvd	Parts per Million Dry Volume		
PSD	Prevention of Significant Deterioration	2SLB	2-Stroke Lean Burn
psi	Pounds per Square Inch	4SLB	4-Stroke Lean Burn
psia	Pounds per Square Inch Absolute	4SRB	4-Stroke Rich Burn
psig	Pounds per Square Inch Gage		
RACT	Reasonably Available Control Technology		
RATA	Relative Accuracy Test Audit		
RAP	Regulated Air Pollutant or Reclaimed Asphalt Pavement		
RFG	Refinery Fuel Gas		
RICE	Reciprocating Internal Combustion Engine		
RO	Responsible Official		
ROAT	Regional Office at Tulsa		
RVP	Reid Vapor Pressure		
SCC	Source Classification Code		
SCF	Standard Cubic Foot		
SCFD	Standard Cubic Feet per Day		