



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
AIR QUALITY PROGRAM

PLAN APPROVAL

Issue Date: February 12, 2021 Effective Date: August 13, 2025
Revision Date: August 6, 2025 Expiration Date: February 12, 2027
Revision Type: Extension

In accordance with the provisions of the Air Pollution Control Act, the Act of January 8, 1960, P.L. 2119, as amended, and 25 Pa. Code Chapter 127, the Owner, [and Operator if noted] (hereinafter referred to as permittee) identified below is authorized by the Department of Environmental Protection (Department) to construct, install, modify or reactivate the air emission source(s) more fully described in the site inventory list. This Facility is subject to all terms and conditions specified in this plan approval. Nothing in this plan approval relieves the permittee from its obligations to comply with all applicable Federal, State and Local laws and regulations.

The regulatory or statutory authority for each plan approval condition is set forth in brackets. All terms and conditions in this permit are federally enforceable unless otherwise designated as "State-Only" requirements.

Plan Approval No. 23-0119J

Federal Tax Id - Plant Code: 23-3102655-3

Owner Information

Name: ENERGY TRANSFER MKT & TERM LP
Mailing Address: 100 GREEN ST
MARCUS HOOK, PA 19061-4800

Plant Information

Plant: ENERGY TRANSF MKT & TERM LP/MARCUS HOOK TERM
Location: 23 Delaware County 23825 Marcus Hook Borough
SIC Code: 4226 Trans. & Utilities - Special Warehousing And Storage, Nec

Responsible Official

Name: EDWARD G HUMAN
Title: VP-MARCUS HOOK OPR
Phone: (610) 859 - 1912 Email: EDWARD.HUMAN@energytransfer.com

Plan Approval Contact Person

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Title: SR SPECIALIST-ENV COMPLI
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[Signature] _____
JILLIAN A. GALLAGHER, SOUTHEAST REGION AIR PROGRAM MANAGER



Plan Approval Description

This plan approval is for the following sources, equipment, and operations to enable or accommodate the processing of approximately 140,000 barrels per day of ethane feedstock into, as well as the transient storage onsite and transfer offsite of refrigerated (liquified) ethane product (hereinafter collectively referred to as "Project Phoenix"):

(a) The installation and temporary operation of the following sources and equipment to enable the processing of ethane feedstock into refrigerated ethane product:

- (1) One new amine treatment system to remove excess carbon dioxide [CO₂] from ethane feedstock prior to fractionation.
- (2) One new dehydration train system to remove water from ethane feedstock prior to fractionation.
- (3) Two new refrigeration systems, each consisting of a closed-loop propane system followed by an open-loop ethane system, for the cooling of dry ethane.
- (4) Two new fractionation towers (demethanizers; Source IDs 142–143) and associated equipment for the removal of methane from dry ethane.
- (5) Two new wet surface air cooling (WSAC) systems (Source ID 141), one associated with each new refrigeration system, to process cooling water for the refrigeration systems.
- (6) All associated piping and components for the refrigerated ethane process.

(b) The installation and temporary operation or use of the following utilities to enable or accommodate the processing of ethane feedstock:

- (1) The installation and temporary operation of one new elevated, air-assisted Project Phoenix Cold Flare (Source ID C04), equipped with high- and low-pressure (HP and LP) cold flare tips, to enable the flaring of refrigerated streams that do not contain water.
 - (2) The use of the existing West Warm Flare (Source ID C03 under Title V Operating Permit No. 23-00119) to accommodate the flaring of streams from the amine treatment system and dehydration train system.
 - (3) The use of three existing auxiliary boilers (1 and 3–4; Source IDs 031 and 033–034 under Title V Operating Permit No. 23-00119) to accommodate the steam demand (36,300 lbs/hr) for the amine treatment system and dehydration train system.
- (c) The installation and temporary operation of two new 600,000-bbl refrigerated ethane storage tanks (Source IDs 124–125) to enable the transient storage of refrigerated ethane product prior to its transfer off-site.
- (d) The use of two existing marine vessel loading docks (1A and 2A; part of Source ID 104 under Title V Operating Permit No. 23-00119) to accommodate the loading of refrigerated ethane product into marine vessels for transfer off-site.



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Note: These same sub-sections are repeated for each source!

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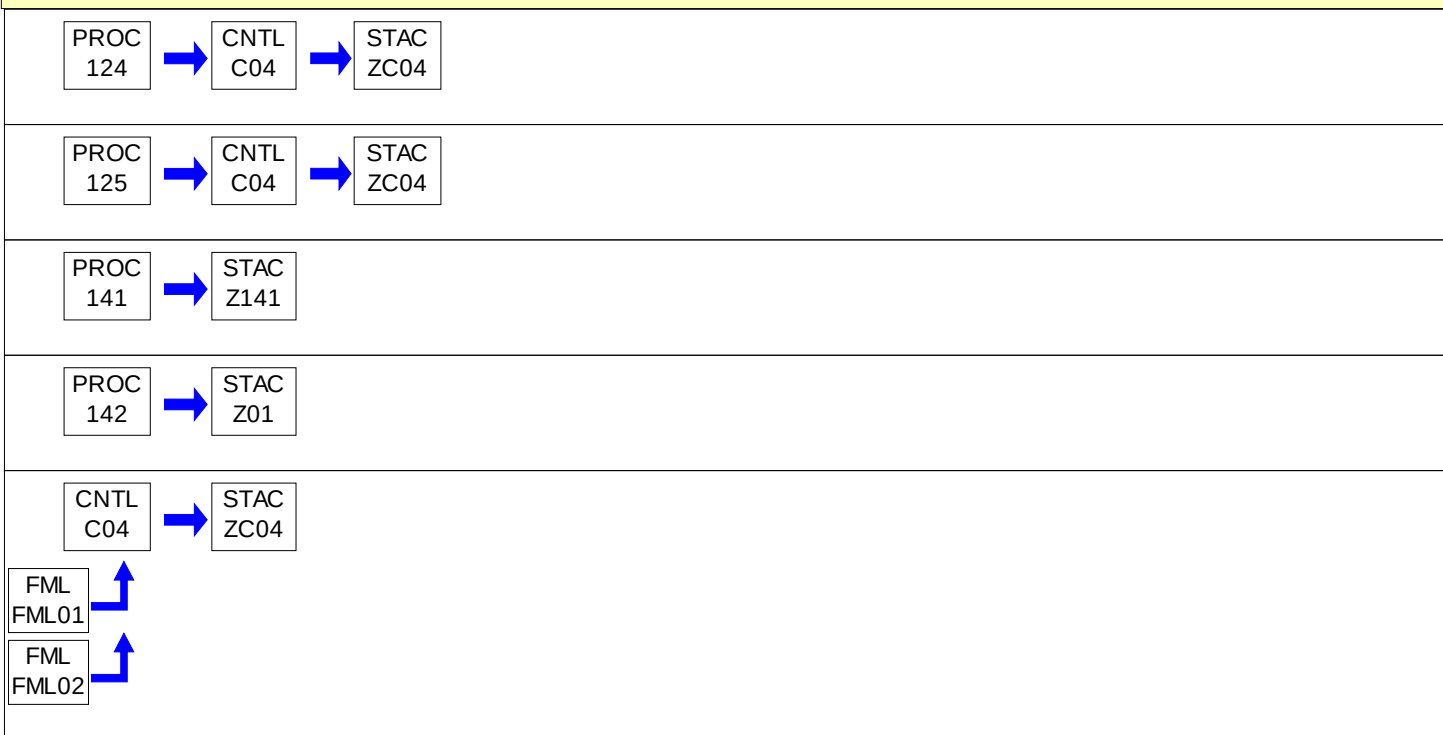
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**SECTION A. Plan Approval Inventory List**

Source ID	Source Name	Capacity/Throughput	Fuel/Material
124	REFRIGERATED ETHANE STORAGE TANK (600 MBBL)	N/A	ETHANE
125	REFRIGERATED ETHANE STORAGE TANK (600 MBBL)	N/A	ETHANE
141	WSAC SYSTEMS (2)	N/A	WATER
142	PROJECT PHOENIX DEMETHANIZERS (2)	N/A	ETHANE/PROPANE/METHA
400	NAT GAS LIQUIDS (NGLS) FUGITIVE EMISS COMPS 28LAER LDAR REQS		
401	ADD'L NGLS FUGITIVE EMISSIONS COMPONENTS LDAR REQS (VOCs)		
501	ADD'L FUGITIVE EMISSIONS COMPONENTS LDAR REQUIREMENTS (GHGS)		
C04	PROJECT PHOENIX COLD FLARE	9.452 MCF/HR	PILOT/PURGE/SWEEP GAS
FML01	NATURAL GAS		
FML02	PROCESS GAS		
Z01	NGLS COMPONENTS FUGITIVE EMISSIONS		
Z141	WSAC SYSTEMS FUGITIVE EMISSIONS		
ZC04	PROJECT PHOENIX COLD FLARE FUGITIVE EMISSIONS		

PERMIT MAPS

**SECTION B. General Plan Approval Requirements****#001 [25 Pa. Code § 121.1]****Definitions**

Words and terms that are not otherwise defined in this plan approval shall have the meanings set forth in Section 3 of the Air Pollution Control Act (35 P.S. § 4003) and 25 Pa. Code § 121.1.

#002 [25 Pa. Code § 127.12b (a) (b)]**Future Adoption of Requirements**

The issuance of this plan approval does not prevent the future adoption by the Department of any rules, regulations or standards, or the issuance of orders necessary to comply with the requirements of the Federal Clean Air Act or the Pennsylvania Air Pollution Control Act, or to achieve or maintain ambient air quality standards. The issuance of this plan approval shall not be construed to limit the Department's enforcement authority.

#003 [25 Pa. Code § 127.12b]**Plan Approval Temporary Operation**

This plan approval authorizes temporary operation of the source(s) covered by this plan approval provided the following conditions are met.

(a) When construction, installation, modification, or reactivation is being conducted, the permittee shall provide written notice to the Department of the completion of the activity approved by this plan approval and the permittee's intent to commence operation at least five (5) working days prior to the completion of said activity. The notice shall state when the activity will be completed and when the permittee expects to commence operation. When the activity involves multiple sources on different time schedules, notice is required for the commencement of operation of each source.

(b) Pursuant to 25 Pa. Code § 127.12b (d), temporary operation of the source(s) is authorized to facilitate the shakedown of sources and air cleaning devices, to permit operations pending the issuance of a permit under 25 Pa. Code Chapter 127, Subchapter F (relating to operating permits) or Subchapter G (relating to Title V operating permits) or to permit the evaluation of the air contaminant aspects of the source.

(c) This plan approval authorizes a temporary operation period not to exceed 180 days from the date of commencement of operation, provided the Department receives notice from the permittee pursuant to paragraph (a), above.

(d) The permittee may request an extension of the 180-day shakedown period if further evaluation of the air contamination aspects of the source(s) is necessary. The request for an extension shall be submitted, in writing, to the Department at least 30 days prior to the end of the initial 180-day shakedown period and shall provide a description of the compliance status of the source, a detailed schedule for establishing compliance, and the reasons compliance has not been established. This temporary operation period will be valid for a limited time and may be extended for additional limited periods, each not to exceed 180 days.

(e) The notice submitted by the permittee pursuant to subpart (a) above, prior to the expiration of the plan approval, shall modify the plan approval expiration date on Page 1 of this plan approval. The new plan approval expiration date shall be 180 days from the date of commencement of operation.

#004 [25 Pa. Code § 127.12(a) (10)]**Content of Applications**

The permittee shall maintain and operate the sources and associated air cleaning devices in accordance with good engineering practice as described in the plan approval application submitted to the Department.

#005 [25 Pa. Code §§ 127.12(c) and (d) & 35 P.S. § 4013.2]**Public Records and Confidential Information**

(a) The records, reports or information obtained by the Department or referred to at public hearings shall be available to the public, except as provided in paragraph (b) of this condition.

(b) Upon cause shown by the permittee that the records, reports or information, or a particular portion thereof, but not emission data, to which the Department has access under the act, if made public, would divulge production or sales figures or methods, processes or production unique to that person or would otherwise tend to affect adversely the

**SECTION B. General Plan Approval Requirements**

competitive position of that person by revealing trade secrets, including intellectual property rights, the Department will consider the record, report or information, or particular portion thereof confidential in the administration of the act. The Department will implement this section consistent with sections 112(d) and 114(c) of the Clean Air Act (42 U.S.C.A. § § 7412(d) and 7414(c)). Nothing in this section prevents disclosure of the report, record or information to Federal, State or local representatives as necessary for purposes of administration of Federal, State or local air pollution control laws, or when relevant in a proceeding under the act.

#006 [25 Pa. Code § 127.12b]**Plan Approval terms and conditions.**

[Additional authority for this condition is derived from 25 Pa. Code Section 127.13]

(a) This plan approval will be valid for a limited time, as specified by the expiration date contained on Page 1 of this plan approval. Except as provided in § § 127.11a and 127.215 (relating to reactivation of sources; and reactivation), at the end of the time, if the construction, modification, reactivation or installation has not been completed, a new plan approval application or an extension of the previous approval will be required.

(b) If construction has commenced, but cannot be completed before the expiration of this plan approval, an extension of the plan approval must be obtained to continue construction. To allow adequate time for departmental action, a request for the extension shall be postmarked at least thirty (30) days prior to the expiration date. The request for an extension shall include the following:

- (i) A justification for the extension,
- (ii) A schedule for the completion of the construction

If construction has not commenced before the expiration of this plan approval, then a new plan approval application must be submitted and approval obtained before construction can commence.

(c) If the construction, modification or installation is not commenced within 18 months of the issuance of this plan approval or if there is more than an 18-month lapse in construction, modification or installation, a new plan approval application that meets the requirements of 25 Pa. Code Chapter 127, Subchapter B (related to plan approval requirements), Subchapter D (related to prevention of significant deterioration of air quality), and Subchapter E (related to new source review) shall be submitted. The Department may extend the 18-month period upon a satisfactory showing that an extension is justified.

#007 [25 Pa. Code § 127.32]**Transfer of Plan Approvals**

(a) This plan approval may not be transferred from one person to another except when a change of ownership is demonstrated to the satisfaction of the Department and the Department approves the transfer of the plan approval in writing.

(b) Section 127.12a (relating to compliance review) applies to a request for transfer of a plan approval. A compliance review form shall accompany the request.

(c) This plan approval is valid only for the specific source and the specific location of the source as described in the application.

#008 [25 Pa. Code § 127.12(a)(4) & 35 P.S. § 4008 & § 114 of the CAA]**Inspection and Entry**

(a) Pursuant to 35 P.S. § 4008, no person shall hinder, obstruct, prevent or interfere with the Department or its personnel in the performance of any duty authorized under the Air Pollution Control Act.

(b) The permittee shall also allow the Department to have access at reasonable times to said sources and associated air cleaning devices with such measuring and recording equipment, including equipment recording visual observations, as the Department deems necessary and proper for performing its duties and for the effective enforcement of the Air Pollution Control Act and regulations adopted under the act.

**SECTION B. General Plan Approval Requirements**

(c) Nothing in this plan approval condition shall limit the ability of the Environmental Protection Agency to inspect or enter the premises of the permittee in accordance with Section 114 or other applicable provisions of the Clean Air Act.

#009 [25 Pa. Code 127.13a]**Plan Approval Changes for Cause**

This plan approval may be terminated, modified, suspended or revoked and reissued if one or more of the following applies:

- (a) The permittee constructs or operates the source subject to the plan approval in violation of the act, the Clean Air Act, the regulations promulgated under the act or the Clean Air Act, a plan approval or permit or in a manner that causes air pollution.
- (b) The permittee fails to properly or adequately maintain or repair an air pollution control device or equipment attached to or otherwise made a part of the source.
- (c) The permittee fails to submit a report required by this plan approval.
- (d) The Environmental Protection Agency determines that this plan approval is not in compliance with the Clean Air Act or the regulations thereunder.

#010 [25 Pa. Code §§ 121.9 & 127.216]**Circumvention**

- (a) The permittee, or any other person, may not circumvent the new source review requirements of 25 Pa. Code Chapter 127, Subchapter E by causing or allowing a pattern of ownership or development, including the phasing, staging, delaying or engaging in incremental construction, over a geographic area of a facility which, except for the pattern of ownership or development, would otherwise require a permit or submission of a plan approval application.
- (b) No person may permit the use of a device, stack height which exceeds good engineering practice stack height, dispersion technique or other technique which, without resulting in reduction of the total amount of air contaminants emitted, conceals or dilutes an emission of air contaminants which would otherwise be in violation of this plan approval, the Air Pollution Control Act or the regulations promulgated thereunder, except that with prior approval of the Department, the device or technique may be used for control of malodors.

#011 [25 Pa. Code § 127.12c]**Submissions**

Reports, test data, monitoring data, notifications shall be submitted to the:

Regional Air Program Manager
PA Department of Environmental Protection
(At the address given on the plan approval transmittal letter or otherwise notified)

#012 [25 Pa. Code § 127.12(a)(9) & 40 CFR Part 68]**Risk Management**

- (a) If required by Section 112(r) of the Clean Air Act, the permittee shall develop and implement an accidental release program consistent with requirements of the Clean Air Act, 40 CFR Part 68 (relating to chemical accident prevention provisions) and the Federal Chemical Safety Information, Site Security and Fuels Regulatory Relief Act (P.L. 106-40).
- (b) The permittee shall prepare and implement a Risk Management Plan (RMP) which meets the requirements of Section 112(r) of the Clean Air Act, 40 CFR Part 68 and the Federal Chemical Safety Information, Site Security and Fuels Regulatory Relief Act when a regulated substance listed in 40 CFR § 68.130 is present in a process in more than the listed threshold quantity at the facility. The permittee shall submit the RMP to the Environmental Protection Agency according to the following schedule and requirements:
 - (1) The permittee shall submit the first RMP to a central point specified by the Environmental Protection Agency no later than the latest of the following:

**SECTION B. General Plan Approval Requirements**

- (i) Three years after the date on which a regulated substance is first listed under § 68.130; or,
- (ii) The date on which a regulated substance is first present above a threshold quantity in a process.

(2) The permittee shall submit any additional relevant information requested by the Department or the Environmental Protection Agency concerning the RMP and shall make subsequent submissions of RMPs in accordance with 40 CFR § 68.190.

(3) The permittee shall certify that the RMP is accurate and complete in accordance with the requirements of 40 CFR Part 68, including a checklist addressing the required elements of a complete RMP.

(c) As used in this plan approval condition, the term "process" shall be as defined in 40 CFR § 68.3. The term "process" means any activity involving a regulated substance including any use, storage, manufacturing, handling, or on-site movement of such substances or any combination of these activities. For purposes of this definition, any group of vessels that are interconnected, or separate vessels that are located such that a regulated substance could be involved in a potential release, shall be considered a single process.

#013 [25 Pa. Code § 127.25]**Compliance Requirement**

A person may not cause or permit the operation of a source subject to § 127.11 (relating to plan approval requirements), unless the source and air cleaning devices identified in the application for the plan approval and the plan approval issued to the source, are operated and maintained in accordance with specifications in the application and conditions in the plan approval issued by the Department. A person may not cause or permit the operation of an air contamination source subject to this chapter in a manner inconsistent with good operating practices.



SECTION C. Site Level Plan Approval Requirements

I. RESTRICTIONS.

No additional requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

II. TESTING REQUIREMENTS.

No additional testing requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

III. MONITORING REQUIREMENTS.

No additional monitoring requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

IV. RECORDKEEPING REQUIREMENTS.

No additional record keeping requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

V. REPORTING REQUIREMENTS.

No additional reporting requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

VI. WORK PRACTICE REQUIREMENTS.

No additional work practice requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

VII. ADDITIONAL REQUIREMENTS.

001 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

For any fugitive emissions components that are subject to the volatile organic compound (VOC) leak detection and repair (LDAR) requirements specified in Section D (under Source IDs 400–401), of this plan approval, and the greenhouse gas (GHG) LDAR requirements specified in Section D (under Source ID 501), of this plan approval, concurrently, the permittee shall, in all cases, apply the more stringent requirements.

002 [25 Pa. Code §127.208]

ERC use and transfer requirements.

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.206.]

(a) In accordance with 25 Pa. Code § 127.206(d), the permittee shall obtain and surrender 49.93 tons of VOC ERCs,¹ determined as follows, for use at this facility prior to the commencement of operation of the sources and equipment authorized under this plan approval:

[38.41 tons (emissions increase for Project Phoenix)] × [offset ratio of 1.3:1 (as indicated in 25 Pa. Code § 127.210(a))].

(b) The VOC ERCs to be surrendered to the Department, as required in (a), above, shall be properly generated, certified by the Department, and processed through the registry no later than the date approved by the Department for commencement of operation of the sources and equipment under this plan approval.

¹ The permittee shall not be required to surrender these VOC ERCs if it has already surrendered the VOC ERCs required to be surrendered under Plan Approval No. 23-0119K (and vice versa).

VIII. COMPLIANCE CERTIFICATION.

No additional compliance certifications exist except as provided in other sections of this plan approval including Section B (relating to Plan Approval General Requirements).

**SECTION C. Site Level Plan Approval Requirements****IX. COMPLIANCE SCHEDULE.**

No compliance milestones exist.

**SECTION D. Source Level Plan Approval Requirements**

Source ID: 124

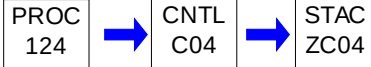
Source Name: REFRIGERATED ETHANE STORAGE TANK (600 MBBL)

Source Capacity/Throughput:

N/A

ETHANE

Conditions for this source occur in the following groups: GROUP 1

**I. RESTRICTIONS.**

No additional requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements) and/or Section E (Source Group Restrictions).

II. TESTING REQUIREMENTS.

No additional testing requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements) and/or Section E (Source Group Restrictions).

III. MONITORING REQUIREMENTS.

No additional monitoring requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements) and/or Section E (Source Group Restrictions).

IV. RECORDKEEPING REQUIREMENTS.

No additional record keeping requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements) and/or Section E (Source Group Restrictions).

V. REPORTING REQUIREMENTS.

No additional reporting requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements) and/or Section E (Source Group Restrictions).

VI. WORK PRACTICE REQUIREMENTS.

No additional work practice requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements) and/or Section E (Source Group Restrictions).

VII. ADDITIONAL REQUIREMENTS.

No additional requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements) and/or Section E (Source Group Restrictions).

**SECTION D. Source Level Plan Approval Requirements**

Source ID: 125

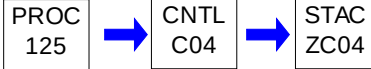
Source Name: REFRIGERATED ETHANE STORAGE TANK (600 MBBL)

Source Capacity/Throughput:

N/A

ETHANE

Conditions for this source occur in the following groups: GROUP 1

**I. RESTRICTIONS.**

No additional requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements) and/or Section E (Source Group Restrictions).

II. TESTING REQUIREMENTS.

No additional testing requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements) and/or Section E (Source Group Restrictions).

III. MONITORING REQUIREMENTS.

No additional monitoring requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements) and/or Section E (Source Group Restrictions).

IV. RECORDKEEPING REQUIREMENTS.

No additional record keeping requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements) and/or Section E (Source Group Restrictions).

V. REPORTING REQUIREMENTS.

No additional reporting requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements) and/or Section E (Source Group Restrictions).

VI. WORK PRACTICE REQUIREMENTS.

No additional work practice requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements) and/or Section E (Source Group Restrictions).

VII. ADDITIONAL REQUIREMENTS.

No additional requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements) and/or Section E (Source Group Restrictions).

**SECTION D. Source Level Plan Approval Requirements**

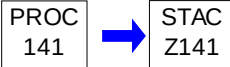
Source ID: 141

Source Name: WSAC SYSTEMS (2)

Source Capacity/Throughput:

N/A

WATER

**I. RESTRICTIONS.****Emission Restriction(s).****# 001 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 123.13(c)(1)(iii).]

(a) The permittee shall ensure that particulate matter (PM) emissions from each of these WSAC systems occurs in such a manner that the concentration of PM in the exhaust gas does not exceed 0.02 grains per dry standard cubic foot (gr/dscf).

(b) The permittee shall ensure that emission into the outdoor atmosphere of PM from these WSAC systems does not exceed 0.55 tons/yr, calculated monthly as a 12-month rolling sum.

II. TESTING REQUIREMENTS.

No additional testing requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

III. MONITORING REQUIREMENTS.**# 002 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

The permittee shall demonstrate compliance with the PM emission restrictions specified in Condition # 001(a)–(b), Section D (under Source ID 141), of this plan approval, for these WSAC systems by performing a monthly analysis for total dissolved solids (ppm, by weight) and/or conductivity (µmhos), or another Department-approved method.

003 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

The permittee shall inspect the high-efficiency drift eliminators of each of these WSAC systems on a 3-year (preventative maintenance cycle) basis.

004 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

The permittee shall monitor the average cooling water circulation flow rate (gals/min) through each of these WSAC systems on a monthly basis.

IV. RECORDKEEPING REQUIREMENTS.**# 005 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

The permittee shall maintain records of the following information for any delay of repair of leaks for these WSAC systems:

- (a) Identification of the affected WSAC system.
- (b) Identification of the location of the leak.
- (c) The reason(s) for the delay of repair.

**SECTION D. Source Level Plan Approval Requirements**

(d) A schedule for completing the repair as soon as practical, but no later than the next shutdown.

(e) The date and concentration of the leak as first identified and the results of all subsequent testing/monitoring events during the delay of repair period.

(f) An estimate of the VOC emissions from the leak for each required delay of repair monitoring interval using the following procedures:

(1) Determine the leak concentration by converting the stripping gas leak concentration (ppm) to an equivalent liquid concentration (ppm, by weight).

(2) Determine the mass flow rate of the cooling water circulated through the affected WSAC system at the monitoring location where the leak was detected. If the monitoring location is an individual riser, determine the total cooling water mass flow rate. Cooling water mass flow rates may be determined using direct measurement, pump curves, heat balance calculations, or other engineering methods. Volumetric flow measurements may be used and converted to mass flow rates using the density of water at the specific monitoring location temperature, or using a default density of water of 8.32 lbs/gal.

(3) For delay of repair monitoring intervals prior to repair of the leak, calculate the potential VOC emissions from the leak for the monitoring interval by multiplying the leak concentration and mass flow rate of cooling water determined in (d)(1)–(2), above, respectively, by the duration of the delay of repair monitoring interval. The duration of the delay of repair monitoring interval is the time period starting at midnight on the day of the previous monitoring event or at midnight on the day the repair would have had to be completed if the repair had not been delayed, whichever is later, and ending at midnight of the day the of the current monitoring event.

(4) For delay of repair monitoring intervals ending with a repaired leak, calculate the potential VOC emissions by multiplying the leak concentration and mass flow rate of cooling water determined for the last monitoring event prior to the re-monitoring event used to verify the leak was repaired by the duration of the final delay of repair monitoring interval. The duration of the final delay of repair monitoring interval is the time period starting at midnight of the day of the last monitoring event prior to re-monitoring to verify the leak was repaired and ending at the time of the re-monitoring event that verified that the leak was repaired.

006 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

(a) The permittee shall maintain records of the following operating parameters for each of these WSAC systems on a monthly basis:

- (1) The average cooling water circulation flow rate (gals/min) through the WSAC system.
- (2) The total dissolved solids (ppm, by weight) and/or conductivity (µmhos) of the cooling water.

(b) The permittee shall maintain records of the following for the WSAC systems:

- (1) The results of the 3-year (preventative maintenance cycle) inspections of the high-efficiency drift eliminators.
- (2) The manufacturer's specifications for the design drift rate.

(c) The permittee shall maintain records of the PM emissions from the WSAC systems on a monthly and 12-month rolling basis, calculated using a Department-approved method.

V. REPORTING REQUIREMENTS.

No additional reporting requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

**SECTION D. Source Level Plan Approval Requirements****VI. WORK PRACTICE REQUIREMENTS.****# 007 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

(a) The permittee shall collect samples of the cooling water circulated through each of these WSAC systems at the locations where it enters and exits the heat exchangers, and analyze the cooling water for VOCs to enable the early detection of leaks. Using a one-sided statistical procedure at the 0.05 level of significance, each instance where the exit mean concentration of VOCs is at least 1 ppm, by weight, or 10% greater than the entrance mean concentration of VOCs, whichever is greater, constitutes a leak.

(b) The concentration of VOCs in the cooling water shall be determined using any EPA-approved method listed in 40 CFR Part 136, as long as the method is sensitive to concentrations as low as 10 ppm, by volume. The same method shall be used for both the entrance and exit samples. Alternative methods may be used upon approval by the Administrator.

(c) When a sample is found to contain VOCs, the permittee shall resample the following day to ensure reliability of the analysis.

(d) The value from analyzed sample(s) shall be used in the monthly VOC emission calculation.

(e) The monitoring for VOC leaks shall be performed in accordance with the following schedule:

- (1) Weekly for 6 months, both initially (i.e., after first being placed into operation) and following completion of a leak repair.
- (2) Monthly thereafter until a leak is detected.

008 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

The permittee shall repair any leaks in these WSAC systems within 45 days after first identifying the leak, except as indicated in Condition # 009(a)–(b), Section D (under Source ID 141), of this plan approval. Actions that may be taken to achieve repair include, but are not limited to:

- (a) Physical modifications to the leaking heat exchanger, such as welding the leak or replacing a tube.
- (b) Blocking the leaking tube within the heat exchanger.
- (c) Changing the pressure so that water flows into the process fluid.
- (d) Replacing the heat exchanger or heat exchanger bundle.
- (e) Isolating, bypassing, or otherwise removing the leaking heat exchanger from service until it is repaired.

009 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

The permittee shall repair any leaks in these WSAC systems as soon as practicable, but no later than 45 days after first identifying the leak, except that the repair may be delayed as follows:

(a) If the repair is technically infeasible without a shutdown of the affected WSAC system, and the total VOC emissions would be less than 25% of the permitted emission limits if a repair would take place, the permittee may delay repair until the next scheduled shutdown of the affected WSAC system. If the VOC concentration increases over successive monitoring periods, the permittee shall repair the leak within 30 calendar days.

(b) If the necessary equipment, parts, or personnel are not available, the permittee may delay the repair for a maximum of 120 calendar days. The permittee must demonstrate that the necessary equipment, parts, or personnel were not available. If the VOC concentration increases over successive monitoring periods, the permittee shall repair the leak within 30 calendar days.

**SECTION D. Source Level Plan Approval Requirements****# 010 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

- (a) The permittee shall not use chromium-based water treatment chemicals in these WSAC systems.
- (b) The WSAC systems shall be installed, operated, and maintained in accordance with the manufacturer's specifications.

VII. ADDITIONAL REQUIREMENTS.**# 011 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

This source grouping shall consist of two 21,000-gpm WSAC systems, each equipped with a high-efficiency drift eliminator. The WSAC systems shall provide cooling water to the ethane and propane refrigeration systems of Project Phoenix.

**SECTION D. Source Level Plan Approval Requirements**

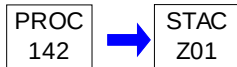
Source ID: 142

Source Name: PROJECT PHOENIX DEMETHANIZERS (2)

Source Capacity/Throughput:

N/A

ETHANE/PROPANE/METHANE

**I. RESTRICTIONS.**

No additional requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

II. TESTING REQUIREMENTS.

No additional testing requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

III. MONITORING REQUIREMENTS.

No additional monitoring requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

IV. RECORDKEEPING REQUIREMENTS.

No additional record keeping requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

V. REPORTING REQUIREMENTS.

No additional reporting requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

VI. WORK PRACTICE REQUIREMENTS.

No additional work practice requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

VII. ADDITIONAL REQUIREMENTS.

001 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

The applicable requirements for this source can be found in Source 103 (Fugitive Equipment Leaks).

**SECTION D. Source Level Plan Approval Requirements**

Source ID: 400

Source Name: NAT GAS LIQUIDS (NGLS) FUGITIVE EMISS COMPS 28LAER LDAR REQS

Source Capacity/Throughput:

I. RESTRICTIONS.

No additional requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

II. TESTING REQUIREMENTS.**# 001 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

The permittee shall ensure that the gas analyzer used for instrument monitoring of fugitive emissions components (i.e., valves, connectors, relief valves, open-ended valves or lines, pumps, compressors, agitators, sampling connection systems, and instrumentation systems) that are subject to the LDAR requirements specified in Section D (under Source IDs 400–401), of this plan approval, conforms to the requirements specified in EPA Method 21, with the following modifications:

(a) Section 7.1.2: The permittee shall calibrate the gas analyzer with methane.

(b) Section 8.1.1: The permittee shall determine the response factor of the instrument for a specific VOC of interest. However, if the permittee is monitoring a mixture of VOCs, the permittee shall calculate the response factor for the average composition of the process fluid, except when all the compounds in the mixture have a response factor less than 10 using methane. If a response factor less than 10 cannot be achieved using methane, then the permittee may calibrate the gas analyzer with one of the VOCs to be measured, or any other VOC, so long as the instrument has a response factor of less than 10 for each of the VOCs to be measured.

III. MONITORING REQUIREMENTS.**# 002 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

The permittee shall perform auditory, visual, and/or olfactory (AVO) inspections for all connectors that are subject to the LDAR requirements specified in Section D (under Source IDs 400–401), of this plan approval, on at least a weekly basis by operating personnel walk-through.

003 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

(a) Except as specified in Condition # 007(a)–(b), Section D (under Source IDs 400–401), of this plan approval, the permittee shall monitor all connectors that are subject to the LDAR requirements specified in Section D (under Source IDs 400–401), of this plan approval, by leak-checking for fugitive emissions on at least a quarterly basis using an approved gas analyzer with a directed maintenance program (i.e., repair and maintenance of components assisted simultaneously by the use of the approved gas analyzer such that a minimum leak concentration is obtained).

(b) In lieu of the monitoring frequency specified in (a), above, the permittee may monitor the connectors on a semiannual basis if the percent of connectors leaking for two consecutive quarterly monitoring periods is less than 0.5 percent.

(c) In lieu of the monitoring frequency specified in (b), above, the permittee may monitor the connectors on an annual basis if the percent of connectors leaking for two consecutive semiannual monitoring periods is less than 0.5 percent.

(d) If the percent of connectors leaking for any semiannual or annual monitoring period is 0.5 percent or greater, the facility shall revert to the quarterly monitoring indicated in (a), above, until the facility again qualifies for the alternative monitoring schedules indicated in (b)–(c), above.

**SECTION D. Source Level Plan Approval Requirements**

(e) The permittee shall calculate the percentage of leaking connectors in (a), above, using the following equation:

$$C_p = (C_l + C_s) \times 100 \div C_t$$

Where:

C_p = The percentage of leaking connectors for the monitoring period.

C_l = The number of connectors found leaking by the end of the monitoring period, either by EPA Method 21 or sight, sound, and smell.

C_s = The number of connectors for which repair has been delayed and are listed on the facility shutdown log.

C_t = The total number of connectors in the facility subject to the monitoring requirements, as of the last day of the monitoring period, not including difficult-to-monitor and unsafe-to-monitor connectors.

004 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

(a) Except as specified in Condition #s 005 and 007, Section D (under Source ID 400), of this plan approval, the permittee shall monitor all valves that are subject to the LDAR requirements specified in Section D (under Source IDs 400–401), of this plan approval, by leak-checking for fugitive emissions on at least a quarterly basis using an approved gas analyzer with a directed maintenance program.

(b) In lieu of the monitoring frequency specified in (a), above, the permittee may monitor valves in gas and light liquid service on a semiannual basis if the percent of valves leaking for two consecutive quarterly monitoring periods is less than 0.5 percent.

(c) In lieu of the monitoring frequency specified in (b), above, the permittee may monitor valves in gas and light liquid service on an annual basis if the percent of valves leaking for two consecutive semiannual monitoring periods is less than 0.5 percent.

(d) If the percent of valves leaking for any semiannual or annual monitoring period is 0.5 percent or greater, the facility shall revert to the quarterly monitoring indicated in (a), above, until the facility again qualifies for the alternative monitoring schedules indicated in (b)–(c), above.

(e) The permittee shall calculate the percentage of leaking valves in (a), above, using the following equation:

$$V_p = (V_l + V_s) \times 100 \div V_t$$

Where:

V_p = The percentage of leaking valves for the monitoring period.

V_l = The number of valves found leaking by the end of the monitoring period, either by EPA Method 21 or sight, sound, and smell.

V_s = The number of valves for which repair has been delayed and are listed on the facility shutdown log.

V_t = The total number of valves in the facility subject to the monitoring requirements, as of the last day of the monitoring period, not including difficult-to-monitor and unsafe-to-monitor valves.

[Note: A more stringent requirement for the timeframe within which to monitor valves is specified in Condition # 009, Section D (under Source ID 401), of this plan approval.]

005 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

(a) The permittee is not required to monitor sealless/leakless valves, including, but not limited to, welded bonnet bellows and diaphragm valves.

(b) The permittee is not required to monitor any existing relief valves that are subject to the LDAR requirements specified in

**SECTION D. Source Level Plan Approval Requirements**

Section D (under Source IDs 400–401), of this plan approval, and equipped with a rupture disc and a pressure-sensing device (e.g., a pressure gauge) between the relief valve and rupture disc to monitor disc integrity, except that the permittee shall monitor the readings of each pressure-sensing device to verify disc integrity on at least a quarterly basis.

006 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

The permittee is not required to monitor the equipment indicated in Condition # 019, Section D (under Source ID 400), of this plan approval, and Condition # 008(b), Section D (under Source ID 401), of this plan approval. Except as specified in Condition

008(c), Section D (under Source ID 401), of this plan approval, the permittee shall monitor all other (existing) pump, compressor, and agitator seals that are subject to the LDAR requirements specified in Section D (under Source IDs 400–401), of this plan approval, by leak-checking for fugitive emissions on at least a quarterly basis using an approved gas analyzer with a directed maintenance program.

[Note: A more stringent requirement for the timeframe within which to monitor existing pumps is specified in Condition # 008(a), Section D (under Source ID 401), of this plan approval.]

007 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

(a) Except as specified in Condition #s 004(b) and 007, Section D (under Source ID 401), of this plan approval, the permittee shall monitor all difficult-to-monitor² fugitive emissions components that are subject to the LDAR requirements specified in Section D (under Source IDs 400–401), of this plan approval, by leak-checking for fugitive emissions on at least an annual basis using an approved gas analyzer with a directed maintenance program.

(b) If an unsafe-to-monitor³ fugitive emissions component is not considered safe to monitor within a calendar year, then the permittee shall monitor the component as soon as possible during safe-to-monitor times.

² As indicated in 40 CFR § 60.482-7a(h)(1), the term "difficult-to-monitor" means that monitoring personnel would need to be elevated more than 2 meters (7 feet) above a permanent support surface to perform monitoring.

³ As indicated in 40 CFR § 60.482-7a(g)(1), the term "unsafe-to-monitor" means that monitoring personnel would be exposed to an immediate danger as a consequence of performing the monitoring.

008 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

The permittee shall re-monitor any replaced fugitive emissions components that are subject to the LDAR requirements specified in Section D (under Source IDs 400–401), of this plan approval, for leaks within 15 calendar days after being returned to service.

IV. RECORDKEEPING REQUIREMENTS.**# 009 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

The permittee shall maintain records of all AVO inspections performed in Condition # 002, Section D (under Source ID 400), of this plan approval, for connectors that are subject to the LDAR requirements specified in Section D (under Source IDs 400–401), of this plan approval, in the operator's log or equivalent.

[Note: The requirement in this condition is met by complying with Condition # 011, Section D (under Source ID 401), of this plan approval.]

**SECTION D. Source Level Plan Approval Requirements****# 010 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

(a) The permittee shall maintain records of the following information for the instrument monitoring performed for fugitive emissions components that are subject to the LDAR requirements specified in Section D (under Source IDs 400–401), of this plan approval:

- (1) The dates and times.
- (2) The test methods.
- (3) The instrument readings.

(b) The permittee shall maintain records of the times that it performed the instrument monitoring for no less than 95% of the instrument readings in (a)(3), above.

011 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

The permittee shall maintain records of the readings of the pressure-sensing devices indicated in Condition # 005(b), Section D (under Source ID 400), of this plan approval, in the operator's log or equivalent, except for those pressure-sensing devices that are continuously monitored with alarms.

012 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

The permittee shall maintain records of the following information for each repair of fugitive emissions components that are subject to the LDAR requirements specified in Section D (under Source IDs 400–401), of this plan approval, including the first attempt at repair:

- (a) The date(s) of the repair.
- (b) The results of the repair.
- (c) Justification for any delay of repair.
- (d) The corrective action(s) taken.

013 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

The permittee shall maintain records of all fugitive emissions components that are subject to the LDAR requirements specified in Section D (under Source IDs 400–401), of this plan approval, and qualify for delay of repair on a delay of repair list.

V. REPORTING REQUIREMENTS.**# 014 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

When the permittee determines that the cumulative daily emission rate of all fugitive emissions components that are

**SECTION D. Source Level Plan Approval Requirements**

subject to the LDAR requirements specified in Section D (under Source IDs 400–401), of this plan approval, on the delay of repair list, as calculated in Condition # 023(c), Section D (under Source ID 400), of this plan approval, multiplied by the number of days until the next scheduled unit shutdown is equal to or greater than the total emissions from a unit shutdown, the permittee shall notify the Department of such determination within 15 calendar days. (Based on the number and severity of tagged leaks awaiting shutdown, the Department may require early unit shutdown or other appropriate action.)

VI. WORK PRACTICE REQUIREMENTS.**# 015 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

The permittee shall ensure that construction of new and reworked piping, valves, relief valves, pump systems, and compressor systems that are subject to the LDAR requirements specified in Section D (under Source IDs 400–401), of this plan approval, conforms to all applicable American National Standards Institute (ANSI), American Petroleum Institute (API), American Society of Mechanical Engineers (ASME), or equivalent codes.

016 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

The permittee shall ensure that no new and reworked underground process pipelines contain any buried valves, such that fugitive emission monitoring is rendered impractical. The permittee shall ensure that all new and reworked buried connectors are welded.

017 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

The permittee shall ensure that new and reworked piping connections that are subject to the LDAR requirements specified in Section D (under Source IDs 400–401), of this plan approval, are welded or flanged, except that screwed (i.e., threaded) connections are permissible on piping smaller than 2 inches in diameter. The permittee shall perform gas or hydraulic testing of the new and reworked piping connections at no less than operating pressure prior to installation or returning fugitive emissions components that are subject to the LDAR requirements specified in Section D (under Source IDs 400–401), of this plan approval, to service, or shall monitor the components for leaks using an approved gas analyzer within 15 calendar days after being returned to service. The permittee shall make adjustments as necessary to obtain leak-free performance.

[Note: A more stringent requirement for the timeframe within which to monitor piping connections for leaks is specified in Condition # 018(a), Section D (under Source ID 401), of this plan approval.]

018 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

To the extent that good engineering practice will permit, the permittee shall ensure that new and reworked valves and piping connections that are subject to the LDAR requirements specified in Section D (under Source IDs 400–401), of this plan approval, are so located to be reasonably accessible for leak-checking during plant operation. The permittee shall identify difficult-to-monitor and unsafe-to-monitor valves, as approved by the Department, in a list maintained on-site and made readily available to the Department upon request. The difficult-to-monitor and unsafe-to-monitor valves may be identified by one or more of the methods described in Condition # 025(b), Section D (under Source ID 400), of this plan approval.

019 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

(a) The permittee shall ensure that all new and replacement pumps, compressors, and agitators installed at this facility that

**SECTION D. Source Level Plan Approval Requirements**

are subject to the LDAR requirements specified in Section D (under Source IDs 400–401), of this plan approval, are equipped with a shaft sealing system that prevents or detects emissions of VOCs from the seal. These seal systems may include, but are not limited to, dual mechanical seals with barrier fluid at higher pressure than process pressure, seals degassing to vent control systems kept in good working order, or seals equipped with an automatic seal failure detection and alarm system.

(b) In lieu of a shaft sealing system for new and replacement pumps, the permittee may instead install submerged pumps or sealless pumps, including, but not limited to, diaphragm, canned, or magnetic-driven pumps.

[Note: Additional requirements for the shaft sealing system in (a), above, are specified in Condition # 019(a), Section D (under Source ID 401), of this plan approval.]

020 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

(a) For each existing relief valve that is subject to the LDAR requirements specified in Section D (under Source IDs 400–401), of this plan approval, and equipped with a rupture disc but not a pressure-sensing device, the permittee shall install and maintain a pressure-sensing device between the relief valve and rupture disc to monitor disc integrity.

(b) The permittee shall ensure that any leaking rupture discs are replaced at the earliest opportunity, but no later than the next process shutdown.

[Notes: A requirement with a timeframe within which to install the pressure-sensing device in (a), above, is specified in Condition # 014(a), Section D (under Source ID 401), of this plan approval. A more stringent requirement for the timeframe in (b), above, within which to replace leaking rupture discs is specified in Condition # 021(b), Section D (under Source ID 401), of this plan approval.]

021 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

Except as specified in Condition # 022(b)(1)–(2), Section D (under Source ID 401), of this plan approval, the permittee shall ensure that each open-ended valve or line that is subject to the LDAR requirements specified in Section D (under Source IDs 400–401), of this plan approval, is equipped with an appropriately sized cap, blind flange, plug, or a second valve to seal the line. Except during sampling, the permittee shall ensure that both valves are closed. If the isolation of equipment for hot work or the removal of a fugitive emissions component for repair or replacement results in an open-ended line or valve, it is exempt from the requirement to install a cap, blind flange, plug, or second valve for 72 hours. If the repair or replacement is not completed within 72 hours, the permittee shall complete either of the following actions within that time period:

(a) The permittee shall install a cap, blind flange, plug, or second valve on the line or valve.

(b) For a plant or unit turnaround lasting up to 45 calendar days, the permittee shall monitor the open-ended valve or line once for leaks above background using an approved gas analyzer. For all other situations, the permittee shall monitor the open-ended valve or line once within 72 hours following the creation of the open-ended line using an approved gas analyzer, and monthly thereafter. For turnarounds and all other situations, leaks are indicated by readings of equal to or greater than 500 parts per million, by volume (ppmv), and must be repaired within 24 hours or the permittee shall install a cap, blind flange, plug, or second valve on the line or valve.

[Note: A more stringent requirement for the timeframes within which to monitor the open-ended valve or line or install a cap, blind flange, plug, or second valve is specified in Condition # 018(b), Section D (under Source ID 401), of this plan approval.]

022 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

**SECTION D. Source Level Plan Approval Requirements**

Except as specified in Condition # 026, Section D (under Source ID 401), of this plan approval, the permittee shall ensure that any fugitive emissions component that is subject to the LDAR requirements specified in Section D (under Source IDs 400–401), of this plan approval, and found to be leaking during an AVO inspection is repaired or monitored using an approved gas analyzer within 15 calendar days⁴ to determine whether the component is leaking VOCs at a concentration of equal to or greater than 500 ppmv. If the component is found to be leaking VOCs at a concentration of equal to or greater than 500 ppmv, it shall be subject to the repair and replacement requirements specified in Condition #s 008, 012–014, 021, and 023, Section D (under Source ID 400), of this plan approval, and Condition #s 012, 016–017, 019–021, and 023, Section D (under Source ID 401), of this plan approval.

⁴ In accordance with Condition # 023(a), Section D (under Source ID 400), of this plan approval, the permittee is still required to make a first attempt at repair within 5 calendar days.

023 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

(a) Except as specified in Condition # 015(a), Section D (under Source ID 401), of this plan approval, the permittee shall ensure that damaged or leaking valves, connectors, compressor seals, pump seals, and agitator seals that are subject to the LDAR requirements specified in Section D (under Source IDs 400–401), of this plan approval, and found to be leaking VOCs at a concentration of equal to or greater than the applicable ppm threshold specified in Section D (under Source IDs 400–401), of this plan approval, or found to be leaking during an AVO inspection (e.g., dripping process fluids) are tagged and replaced or repaired. The permittee shall make a first attempt to repair the leak within 5 calendar days. The permittee shall repair a leaking fugitive emissions component as soon as practicable, but no later than 15 calendar days after the leak is found.

(b) If the repair of a fugitive emissions component would require a unit shutdown that would create more emissions than the repair would eliminate, then the permittee may delay the repair until the next scheduled shutdown. The permittee shall identify by tagging all leaking components for which repair is delayed until the next scheduled shutdown.

(c) The permittee shall calculate the cumulative daily emissions from all fugitive emissions components on the delay of repair list indicated in Condition # 013, Section D (under Source ID 400), of this plan approval, using EPA's Protocol for Equipment Leak Emission Estimates (EPA-453/R-95-107) and using the emission factors in Table 2-1, or other Department- or EPA-approved equivalent.

VII. ADDITIONAL REQUIREMENTS.**# 024 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

(a) The LDAR requirements specified under this Source ID shall apply to the following process units and all associated piping and fugitive emissions components in VOC service⁵ and related to the NGLs processing, storage, and distribution operations at the facility:

- (1) Auxiliary boilers 1 and 3–4 (Source IDs 031 and 033–034, respectively).
- (2) The four refrigerated ethane storage tanks (Source IDs 101, 117, and 124–125).
- (3) The three refrigerated propane storage tanks (Source IDs 102 and 119–120).
- (4) The refrigerated marine vessel loading (Source ID 104).
- (5) The refrigerated NGLs-related fugitive emissions components of the caverns (part of Source ID 105).

⁵ As the term is defined in 40 CFR § 60.481a (i.e., "contains or contacts a process fluid that is at least 10[%] VOC, by weight").

- (6) The three demethanizers (Source IDs 106A and 142).

**SECTION D. Source Level Plan Approval Requirements**

- (7) The natural gasoline loading rack (Source ID 111).
- (8) The refrigerated butane storage tank (Source ID 118).
- (9) Internal floating roof storage tanks 246, 250, 527, 607, 609, 611, 253, and 610 (Source IDs 133, 136, 178, 188, 190, 192, 204, and 212, respectively).
- (10) The 15-2B rail loading and unloading rack for propane, butane, and natural gasoline.
- (11) The East Cold Flare (Source ID C01).
- (12) The West Cold Flare (Source ID C02).
- (13) The Project Phoenix Cold Flare (Source ID C04).
- (14) Propane storage sphere S20.
- (15) Butane storage sphere S21.
- (16) Pentane storage spheres 3, 4, and HS-16.
- (17) Process gas vessel V282 of the 15-2B gas plant unit indicated in Condition # 032, Section D (under Source ID 801), of Title V Operating Permit No. 23-00119, and all associated piping and fugitive emissions components, including the GC shelter, leading to auxiliary boilers 1 and 3–4.
- (b) The permittee shall provide the Department with a listing of all new process units, piping, and fugitive emissions components that are subject to the LDAR requirements specified in Section D (under Source IDs 400–401), of this plan approval, within 60 days after commencing operation. The listing shall be categorized by process area, specify the fugitive emissions component count in each process area, include an explanation of why each fugitive emissions component designated as difficult-to-monitor or unsafe-to-monitor is designated as such, and include a written plan that requires monitoring of each unsafe-to-monitor component as frequently as practicable during safe-to-monitor times.

025 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

- (a) The LDAR requirements specified in Condition #s 001, 004–006, 008, 011, and 019–020, Section D (under Source ID 400), of this plan approval, shall not apply where the VOC has an aggregate partial pressure or vapor pressure of less than 0.044 pounds per square inch absolute (psia) at 68 °F or has an operating pressure at least 5 kilopascals (kPa) (0.725 psi) below ambient pressure. The permittee shall identify fugitive emissions components excluded from these requirements in a list, or by one of the methods described in (b), below, and made readily available to the Department upon request.
- (b) The exempted components may be identified by one or more of the following methods:
 - (1) Piping and instrumentation diagram (PID).
 - (2) A written or electronic database or electronic file.
 - (3) Color coding.
 - (4) A form of weatherproof identification.
 - (5) Designation of exempted process unit boundaries.

**SECTION D. Source Level Plan Approval Requirements**

Source ID: 401

Source Name: ADD'L NGLS FUGITIVE EMISSIONS COMPONENTS LDAR REQS (VOCS)

Source Capacity/Throughput:

I. RESTRICTIONS.

No additional requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

II. TESTING REQUIREMENTS.**# 001 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

(a) In addition to the requirements for the gas analyzer specified in Condition # 001, Section D (under Source ID 400), of this plan approval, the permittee shall ensure that the gas analyzer meets the following requirements:

(1) The permittee shall calibrate the gas analyzer before use each day.

(2) The permittee shall perform a calibration drift assessment for the gas analyzer, at a minimum, at the end of each monitoring day in accordance with the following requirements:

(i) The permittee shall use the same calibration gas(es) that were used to calibrate the gas analyzer before use.

(ii) The permittee shall follow the procedures specified in Section 10.1 of EPA Method 21, except for adjusting the meter readout to correspond to the calibration gas value.

(iii) The permittee shall record the instrument reading for each scale used, as specified in 40 CFR § 60.486a(e)(7).

(iv) The permittee shall calculate the calibration drift, as follows:

(A) The permittee shall determine the average algebraic difference between the three meter readings and the most recent calibration value.

(B) The permittee shall divide the algebraic difference in (a)(2)(iv)(A), above, by the initial calibration value and multiply by 100 to express as a percentage.

(b) If any calibration drift assessment shows a negative drift of more than 10% from the initial calibration value, then the permittee shall re-monitor all fugitive emissions components monitored since the last calibration for which the initial instrument reading was less than the applicable ppm threshold specified in Section D (under Source IDs 400–401), of this plan approval, but the reading after being multiplied by (100 minus the percent of negative drift/divided by 100) is equal to or greater than the applicable ppm threshold. If any calibration drift assessment shows a positive drift of more than 10% from the initial calibration value, then, at its discretion, the permittee may re-monitor all fugitive emissions components monitored since the last calibration for which the initial instrument reading was equal to or greater than the applicable ppm threshold, but the reading after being multiplied by (100 plus the percent of positive drift/divided by 100) is less than the applicable ppm threshold.

[Note: The provisions of 40 CFR § 60.485a(b)(1)–(2) serve as a basis for this plan approval condition.]

002 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

(a) The permittee shall test each fugitive emissions component subject to the requirements specified in Section D (under Source IDs 400–401), of this plan approval, unless it is demonstrated that the process unit is not in VOC service (i.e., the VOC content of the process fluid that is contained in or contacts the components would never be reasonably expected to exceed 10%, by weight). For purposes of this demonstration, the permittee shall use the following methods and procedures to determine the VOC content in the process fluid:

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- (1) The permittee shall use procedures that conform to the general methods in ASTM E260-73, 91, or 96, E168-67, 77, or 92, E169-63, 77, or 93.
- (2) The permittee may exclude from the total quantity of organic compounds those compounds that are considered by the Administrator to have negligible photochemical reactivity.
- (3) The permittee may use engineering judgment to estimate the VOC content if a fugitive emissions component had not been shown previously to be in VOC service. If the Administrator disagrees with the judgment, the methods and procedures in (a)(1)–(2), above, shall be used to resolve the disagreement.
- (b) The permittee shall demonstrate that a fugitive emissions component is in light liquid service by showing that all the following conditions apply:
- (1) The vapor pressure of one or more of the organic components in the process fluid is greater than 0.3 kPa at 20 °C (1.2 inches of water at 68 °F). (The permittee shall use standard reference texts or ASTM D2879-83, 96, or 97 to determine the vapor pressures.)
- (2) The total concentration of the pure organic components in (b)(1), above, is equal to or greater than 20%, by weight.
- (3) The process fluid is a liquid at operating conditions.
- (c) The permittee shall determine compliance with the standards for flares as follows:
- (1) The permittee shall use EPA Method 22 to determine visible emissions.
- (2) The permittee shall use a thermocouple or any other equivalent device to monitor the presence of a pilot flame in the flare.
- (3) The permittee shall calculate the maximum permitted velocity for air-assisted flares using the following equation:
- $$V_{\max} = K1 + (K2 \times HT)$$
- Where:
- $V_{\max}$ = The maximum permitted velocity, in units of m/sec (ft/sec).
- $K1$ = 8.706 m/sec (28.56 ft/sec).
- $K2$ = 0.7084 m⁴/MJ-sec (0.087 ft⁴/Btu-sec).
- HT = The net heating value of the gas being combusted, in units of MJ/scm (Btu/scf), as calculated in accordance with 40 CFR § 60.485a(g)(4)–(6).
- (4) The permittee shall use EPA Method 2, 2A, 2C, or 2D, as appropriate, to determine the actual exit velocity of a flare. (If needed, the permittee shall use the unobstructed (free) cross-sectional area of the flare tip.)
- (d) The permittee shall ensure that samples used in conjunction with (a)–(c), above, are representative of the process fluid that is contained in or contacts the fugitive emissions component or the gas being combusted in the flare.
- [Note: The provisions of 40 CFR § 60.485a(d)–(g) serve as a basis for this plan approval condition.]

III. MONITORING REQUIREMENTS.**# 003 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

In addition to the requirement to perform AVO inspections for connectors indicated in Condition # 002, Section D (under Source ID 400), of this plan approval, and, except as specified in Condition # 024, Section D (under Source ID 401), of this plan approval, the permittee shall perform AVO inspections for all process units, piping, and other fugitive emissions

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components that are subject to the LDAR requirements specified in Section D (under Source IDs 400–401), of this plan approval, on at least a weekly basis by operating personnel walk-through.

004 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

(a) Except as specified in Condition # 005(b), Section D (under Source ID 400), of this plan approval, the permittee shall monitor existing relief valves that are subject to the LDAR requirements specified in Section D (under Source IDs 400–401), of this plan approval, as follows:

(1) The permittee shall monitor existing relief valves that are equipped with a rupture disc, but not equipped with a pressure-sensing device between the relief valve and rupture disc, by leak-checking for fugitive emissions in accordance with Condition # 009, Section D (under Source ID 401), of this plan approval, until such time that it complies with the requirements to install and maintain a pressure-sensing device specified in Condition # 020(a), Section D (under Source ID 400), of this plan approval, and Condition # 014(a), Section D (under Source ID 401), of this plan approval.

(2) The permittee shall monitor existing relief valves that are not equipped with a rupture disc by leak-checking for fugitive emissions in accordance with Condition # 009(a)–(c), Section D (under Source ID 401), of this plan approval. (Alternatively, the permittee may install a rupture disc and a pressure-sensing device between the valve and rupture disc and monitor in accordance with Condition # 005(b), Section D (under Source ID 400), of this plan approval.)

(3) The permittee shall ensure that, following the installation of a new rupture disc in accordance with Condition # 021(b), Section D (under Source ID 401), of this plan approval, and within the same timeframe, it monitors the relief valve by leak-checking for fugitive emissions using an approved gas analyzer with a directed maintenance program to confirm the conditions of no detectable emissions, as indicated by an instrument reading of less than 500 ppmv.

(b) The permittee shall monitor new and replacement relief valves that are subject to the LDAR requirements specified in Section D (under Source IDs 400–401), of this plan approval, as follows:

(1) The permittee is not required to monitor new and replacement relief valves that are routed to a process or fuel gas system or equipped with a closed vent system capable of capturing and transporting leakage through the relief valve to a control device that complies with the requirements of 40 CFR § 60.482-10a.

(2) The permittee shall monitor the new and replacement relief valves indicated in Condition # 014(c)(1), Section D (under Source ID 401), of this plan approval, in accordance with Condition # 005(b), Section D (under Source ID 400), of this plan approval.

(3) The permittee shall monitor the new and replacement relief valves indicated in Condition # 014(c)(2), Section D (under Source ID 401), of this plan approval, in accordance with Condition # 009(a)–(c), Section D (under Source ID 401), of this plan approval, regardless of accessibility (i.e., the requirements specified in Condition # 007(a)–(b), Section D (under Source ID 400), of this plan approval, are not applicable).

[Note: The provisions of 40 CFR § 60.482-4a(b) serve as a basis for this plan approval condition.]

005 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

Except as specified in Condition #s 006 and 008, Section D (under Source ID 400), of this plan approval, and Condition # 009(d), Section D (under Source ID 401), of this plan approval, within 60 days after commencing operation, the permittee shall monitor all new fugitive emissions components subject to the requirements specified in Section D (under Source IDs 400–401), of this plan approval, by leak-checking for fugitive emissions using an approved gas analyzer with a directed maintenance program.

**SECTION D. Source Level Plan Approval Requirements****# 006 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

(a) The permittee shall use dataloggers and/or other electronic data collection devices for all data collection during all LDAR monitoring. The permittee shall ensure that the responsible personnel transfer, on a daily basis, electronic data from electronic datalogging devices to the electronic database. For each monitoring event in which an electronic data collection device is used, the monitoring data collected by the permittee shall include the information required to be maintained in Condition # 010(a)(1)–(3), Section D (under Source ID 400), of this plan approval, and Condition # 011(a)(1)–(3), Section D (under Source ID 401), of this plan approval.

(b) The permittee may use paper logs where necessary or more feasible (e.g., small rounds, re-monitoring, or when dataloggers are not available or broken), and shall maintain records of, at a minimum, the information required to be maintained in Condition # 010(a)(1)–(3), Section D (under Source ID 400), of this plan approval, and Condition # 012(a)(1)–(3), Section D (under Source ID 401), of this plan approval. The permittee shall transfer any manually-recorded monitoring data to the electronic database within 7 days of the monitoring.

007 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

The permittee is not required to monitor the following types of connectors by leak-checking for fugitive emissions using a gas analyzer:

(a) Connectors that satisfy any of the following criteria, such that they are considered to be inaccessible:

- (1) The connectors are buried.
- (2) The connectors are insulated in a manner that prevents access to them by the sample probe of the gas analyzer.
- (3) The connectors are obstructed by equipment or piping that prevents access to them by the sample probe of the gas analyzer.
- (4) The connectors are unable to be reached from a wheeled scissor-lift or hydraulic-type scaffold that would allow access to them up to 7.6 meters (25 feet) above the ground.
- (5) Access to the connectors would require the erection of a scaffold.
- (6) The connectors are unsafe to monitor at all times (e.g., access would require the use of a wheeled scissor-lift on unstable or uneven terrain, require the use of a motorized man-lift basket in areas where an ignition potential exists, require proximity to hazards such as electrical lines, or risk damage to sources or equipment).

(b) Ceramic or ceramic-lined (e.g., porcelain, glass, or glass-lined) connectors.

[Note: The provisions of 40 CFR § 60.482-11a(f)(1)(i)–(vi) serve as a basis for this plan approval condition.]

008 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

(a) Except as specified in Condition # 006, Section D (under Source ID 400), of this plan approval, the permittee shall monitor all existing pumps that are subject to the LDAR requirements specified in Section D (under Source IDs 400–401), of this plan approval, and do not satisfy the applicable criteria specified in Condition # 019(a), Section D (under Source ID 401), of this plan approval, by leak-checking for fugitive emissions on at least a monthly basis using an approved gas analyzer with a directed maintenance program.

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(b) The permittee shall ensure that all existing compressors satisfy the applicable criteria specified in Condition # 019(a), Section D (under Source ID 401), of this plan approval.

(c) The permittee is not required to monitor any pump or compressor that is equipped with a closed vent system capable of capturing and transporting any leakage from the seal or seals of the pump or from the compressor drive shaft to a process or fuel gas system or to a control device that complies with the requirements of 40 CFR § 60.482-10a.

[Note: The provisions of 40 CFR §§ 60.482-2a(a)(1) and (f) and 60.482-3a(a)(1) and (h) serve as a basis for this plan approval condition.]

009 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

(a) Except as specified in Condition # 007(a)–(b), Section D (under Source ID 400), of this plan approval, the permittee shall monitor all valves in gas and light liquid service that are subject to the LDAR requirements specified in Section D (under Source IDs 400–401), of this plan approval, by leak-checking for fugitive emissions on at least a monthly basis using an approved gas analyzer with a directed maintenance program.

(b) In lieu of the monitoring frequency specified in (a), above, the permittee may monitor any valve for which a leak is not detected for 2 successive months during the first month of every quarter, beginning with the next quarter. (Alternatively, the permittee may elect to subdivide a process unit into two or three subgroups of valves and monitor each subgroup in a different month during the quarter, provided each subgroup is monitored every 3 months. The permittee shall keep records of the valves assigned to each subgroup.)

(c) If a leak is detected for any valve with quarterly monitoring, the valve shall revert to the monthly monitoring frequency indicated in (a), above, until the valve again qualifies for the alternative monitoring schedule indicated in (b), above.

(d) Within 30 days after commencing operation, the permittee shall monitor all new valves subject to the requirements specified in Section D (under Source IDs 400–401), of this plan approval, by leak-checking for fugitive emissions using an approved gas analyzer with a directed maintenance program.

[Note: The provisions of 40 CFR § 60.482-7a(a) and (c) serve as a basis for this plan approval condition.]

010 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

The permittee shall re-monitor any repaired fugitive emissions components that are subject to the LDAR requirements specified in Section D (under Source IDs 400–401), of this plan approval, to verify repair within 15 calendar days after the affected process unit is returned to service following a delay in repair.

IV. RECORDKEEPING REQUIREMENTS.**# 011 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

The permittee shall maintain records of the following information for each AVO inspection performed in Condition # 002, Section D (under Source ID 400), of this plan approval, and Condition # 003, Section D (under Source ID 401), of this plan approval, for process units, piping, and fugitive emissions components that are subject to the LDAR requirements specified in Section D (under Source IDs 400–401), of this plan approval, in the operator's log or equivalent:

(a) The date and time of the inspection.

(b) The results of the inspection.

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- (c) The identification number of each fugitive emissions component for which a leak is detected.

[Compliance with this streamlined plan approval condition assures compliance with Condition # 002, Section D (under Source ID 400), of this plan approval.]

012 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

- (a) In addition to the recordkeeping requirements for instrument monitoring specified in Condition # 010, Section D (under Source ID 400), of this plan approval, the permittee shall maintain records of the following information for the instrument monitoring of fugitive emissions components that are subject to the LDAR requirements specified in Section D (under Source IDs 400–401), of this plan approval:

- (1) The identification number of each fugitive emissions component.
- (2) The identification number of the gas analyzer used.
- (3) The identification number of the operator.

- (b) In addition to the recordkeeping requirements for repairs specified in Condition # 012–013, Section D (under Source ID 400), of this plan approval, when a fugitive emissions component is found to be leaking VOCs at a concentration of equal to or greater than the applicable ppm threshold specified in Section D (under Source IDs 400–401), of this plan approval, the permittee shall maintain records of the following information in a readily-accessible log book for a minimum of 5 years:

- (1) The information indicated in (a)(1)–(3), above, except when indications of liquids dripping from a pump are designated as a leak.
- (2) The date that the leak was detected.
- (3) The repair methods applied in each attempt to repair the leak.
- (4) The maximum instrument reading measured by EPA Method 21 at the time the leak is successfully repaired or determined to be non-repairable, except when a pump is repaired by eliminating indications of liquids dripping.
- (5) The signature of the employee (or other designee of the permittee) whose decision it was that repair could not be effected without a process shutdown.
- (6) The expected date of successful repair of the leak if a leak is not repaired within 15 days.
- (7) The dates of process unit shutdowns that occur while the component is unrepaired.
- (8) The date of successful repair of the leak.

- (c) The permittee shall maintain records of the following information pertaining to the design requirements for closed vent systems and control devices described in 40 CFR § 60.482-10a in a readily-accessible location:

- (1) Detailed schematics, design specifications, and PIDs.
- (2) The dates and descriptions of any changes in the design specifications.

- (3) A description of the parameter or parameters monitored, as required in 40 CFR § 60.482-10a(e), to ensure that control devices are operated and maintained in conformance with their design and an explanation of why that parameter (or parameters) was selected for the monitoring;

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(4) Periods when the closed vent systems and control devices required in 40 CFR §§ 60.482-2a, 60.482-3a, 60.482-4a, and 60.482-5a are not operated as designed, including periods when a flare pilot light does not have a flame.

(5) Dates of startups and shutdowns of the closed vent systems and control devices required in 40 CFR §§ 60.482-2a, 60.482-3a, 60.482-4a, and 60.482-5a.

(d) The permittee shall maintain records of the following information pertaining to all process units and/or fugitive emissions components that are subject to the LDAR requirements specified in Section D (under Source IDs 400–401), of this plan approval, in a readily-accessible log book:

(1) A list of identification numbers for the components.

(2) The following information for each compliance test required in 40 CFR §§ 60.482-2a(e), 60.482-3a(i), 60.482-4a, and 60.482-7a(f):

(i) The date performed.

(ii) The background level measured during the test.

(iii) The maximum instrument reading measured at the component during the test.

(3) The following information for each gas analyzer calibration performed in Condition # 001, Section D (under Source IDs 400–401), of this plan approval:

(i) The date of the calibration.

(ii) The calibration gas cylinder identification, certification date, and certified concentration (and a description of the procedure used if the permittee makes its own calibration gas).

(iii) The instrument scale(s) used.

(iv) A description of any corrective action taken if the meter readout could not be adjusted to correspond to the calibration gas value, in accordance with Section 10.1 of EPA Method 21.

(v) The results of each calibration drift assessment required in Condition # 001(a)(2), Section D (under Source ID 401), of this plan approval (i.e., the instrument reading for calibration at the end of the monitoring day and the calculated percent difference from the initial calibration value).

(vi) The initials of the operator that performed the calibration.

(4) The schedule of monitoring, including the start and end dates of each monitoring period, for each process unit and component type.

(5) Each pressure release from a relief valve.

(6) If applicable, a list of identification numbers for components in vacuum service.

(e) The permittee shall maintain a listing of identification numbers for fugitive emissions components that are subject to the LDAR requirements specified in Section D (under Source IDs 400–401), of this plan approval, and designated as difficult-to-monitor or unsafe-to-monitor, in a readily-accessible log book. The listing shall also include an explanation of why each component is designated as such and the plan or schedule for monitoring each component.

(f) The permittee shall maintain records of the following information in a readily-accessible log book:

(1) The design criterion required in 40 CFR §§ 60.482-2a(d)(5) and 60.482-3a(e)(2) and explanation of the design criterion.

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(2) Any changes to this criterion and the reasons for the changes.

(g) The permittee shall maintain records of the following information in a readily-accessible log book:

(1) An analysis demonstrating the design capacity of the process units at the facility.

(2) A statement listing the feed or raw materials and products from the process units and an analysis demonstrating whether these chemicals are heavy liquids or beverage alcohol.

(3) An analysis demonstrating the fugitive emissions components that are not in VOC service.

[Note: The provisions of 40 CFR § 60.486a(a), (c)–(f), and (h)–(j) serve as a basis for this plan approval condition.]

V. REPORTING REQUIREMENTS.

013 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

(a) The permittee shall submit semiannual reports to the Department beginning 6 months after the initial startup date.

(b) The initial semiannual report shall include the following information:

(1) The process unit identification.

(2) The number of valves subject to the requirements of 40 CFR § 60.482-7a, excluding those valves designated for no detectable emissions under the provisions of 40 CFR § 60.482-7a(f).

(3) If applicable, the number of pumps subject to the requirements of 40 CFR § 60.482-2a, excluding those pumps designated for no detectable emissions under the provisions of 40 CFR § 60.482-2a(e) and those pumps complying with 40 CFR § 60.482-2a(f).

(4) If applicable, the number of compressors subject to the requirements of 40 CFR § 60.482-3a, excluding those compressors designated for no detectable emissions under the provisions of 40 CFR § 60.482-3a(i) and those compressors complying with 40 CFR § 60.482-3a(h).

(5) The number of connectors subject to the requirements of 40 CFR § 60.482-11a.

(c) All semiannual reports shall include the following information, summarized from the information in 40 CFR § 60.486a:

(1) The process unit identification;

(2) The following information for each month during the semiannual reporting period:

(i) The number of valves for which leaks were detected as described in 40 CFR § 60.482-7a(b) or §60.483-2a.

(ii) The number of valves for which leaks were not repaired as required in 40 CFR § 60.482-7a(d)(1).

(iii) The number of pumps for which leaks were detected as described in 40 CFR § 60.482-2a(b), (d)(4)(ii)(A) or (B), or (d)(5)(iii).

(iv) The number of pumps for which leaks were not repaired as required in 40 CFR § 60.482-2a(c)(1) and (d)(6).

(v) The number of compressors for which leaks were detected as described in 40 CFR § 60.482-3a(f).

(vi) The number of compressors for which leaks were not repaired as required in 40 CFR § 60.482-3a(g)(1).

(vii) The number of connectors for which leaks were detected as described in 40 CFR § 60.482-11a(b).

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(viii) The number of connectors for which leaks were not repaired as required in 40 CFR § 60.482-11a(d).

(ix) The facts that explain each delay of repair and, where appropriate, why a process unit shutdown was technically infeasible.

(3) The dates of process unit shutdowns that occurred within the semiannual reporting period.

(4) Revisions to items reported in (b), above, if changes have occurred since the initial report or subsequent revisions to the initial report.

(d) The permittee shall report the results of all performance tests in accordance with 40 CFR § 60.8. The provisions of 40 CFR § 60.8(d) do not apply, except that the permittee must notify the Department of the schedule for the initial performance tests at least 30 days before the initial performance tests.

[Note: The provisions of 40 CFR § 60.487a(a)–(c) and (e)–(f) serve as a basis for this plan approval condition.]

VI. WORK PRACTICE REQUIREMENTS.**# 014 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

(a) Within 180 days after the date of issuance of this plan approval, the permittee shall install a pressure-sensing device between the relief valve and rupture disc for the existing relief valves indicated in Condition # 004(a)(1), Section D (under Source ID 401), of this plan approval.

(b) Except as specified in (c), below, the permittee shall ensure that all new and replacement relief valves that are subject to the LDAR requirements specified in Section D (under Source IDs 400–401), of this plan approval, are routed to a process or fuel gas system or equipped with a closed vent system capable of capturing and transporting leakage through the pressure relief device to a control device that complies with the requirements of 40 CFR § 60.482-10a.

(c) If the routing of any new or replacement relief valve(s) to a control device, in the manner described in (b), above, poses a safety concern, the permittee shall provide justification to the Department for approval to install a relief valve(s) that vent to atmosphere and are equipped in one of the following manners:

(1) With a rupture disc and a pressure-sensing device between the valve and rupture disc.

(2) Without a rupture disc.

015 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

(a) The permittee shall ensure that, if any of the inaccessible, ceramic, or ceramic-lined connectors indicated in Condition # 007, Section D (under Source ID 401), of this plan approval, are found to be leaking during an AVO inspection, the permittee shall eliminate the AVO or other indications of the leak as soon as practical.

(b) Except for instrumentation systems and the inaccessible, ceramic, or ceramic-lined connectors indicated in Condition # 007, Section D (under Source ID 401), of this plan approval, the permittee shall identify the connectors subject to the LDAR requirements specified in Section D (under Source IDs 400–401), of this plan approval. The permittee is not required to individually identify all connectors in a designated area or length of pipe, so long as they are identified as a group and the number of connectors is indicated.

[Note: The provisions of 40 CFR § 60.482-11a(f)(2) and (g) serve as a basis for this plan approval condition.]

**SECTION D. Source Level Plan Approval Requirements****# 016 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

(a) If any valves in heavy liquid service are found to be leaking during an AVO inspection, the permittee shall follow either of the following procedures:

(1) The LDAR requirements specified in Conditions # 022–023, Section D (under Source ID 400), of this plan approval, except that the permittee shall monitor the valve using a gas analyzer within 5 calendar days.

(2) The permittee shall eliminate the AVO or other indications of the leak within 5 calendar days.

(b) The first attempts at repair of valves in heavy liquid service include, but are not limited to, the following best practices, where practicable:

(1) The tightening or replacement of bonnet bolts.

(2) The tightening of packing gland nuts.

(3) The injection of lubricant into lubricated packing.

(4) Ensuring that the seal flush is operating at design pressure and temperature.

[Note: The provisions of 40 CFR § 60.482-8a(a)(1)–(2) and (d) serve as a basis for this plan approval condition.]

017 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

In addition to the LDAR requirements specified in Conditions # 022–023, Section D (under Source ID 400), of this plan approval, when a fugitive emissions component is found to be leaking VOCs at a concentration of equal to or greater than the applicable ppm threshold specified in Section D (under Source IDs 400–401), of this plan approval, the permittee shall comply with the following requirements:

(a) The tags referenced in Condition # 023(a)–(b), Section D (under Source ID 400), of this plan approval, shall be weatherproof and marked with the following readily-visible information:

(1) The identification number of the component.

(2) The date on which the permittee found the leak.

(b) Except as specified in (c), below, the permittee may remove the tag on a fugitive emissions component after it has been repaired.

(c) The permittee may remove the tag on a valve after it has been monitored for 2 successive months and the instrument readings are less than the applicable ppm threshold specified in Section D (under Source IDs 400–401), of this plan approval. (At this point, the valve may be considered to be repaired and no longer subject to delay of repair requirements.)

[Note: The provisions of 40 CFR §§ 60.482-9(f) and 60.486a(b) serve as a basis for this plan approval condition.]

018 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

(a) The permittee shall comply with the requirements for piping connections specified in Condition # 017, Section D (under Source ID 400), of this plan approval, except that the timeframe within which to monitor the piping connections shall be 8

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hours instead of 15 calendar days.

(b) The permittee shall comply with the requirements for open-ended valves or lines specified in Condition # 021, Section D (under Source ID 400), of this plan approval, except that the timeframes within which to monitor the open-ended valve or line or install a cap, blind flange, plug, or second valve if a repair or replacement shall be 24 hours instead of 72 hours.

019 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

(a) In addition to the requirements for shaft sealing systems for pumps and compressors specified in Condition # 019(a), Section D (under Source ID 400), of this plan approval, the permittee shall ensure that the shaft sealing systems satisfy the following criteria:

(1) The dual mechanical seal system for pumps or compressor seal system satisfies one of the following criteria:

(i) It is operated with the barrier fluid at a pressure that is at all times greater than the pump or compressor stuffing box pressure.

(ii) It is equipped with a barrier fluid degassing reservoir that is routed to a process or fuel gas system or connected by a closed vent system to a control device that complies with the requirements of 40 CFR § 60.482-10a.

(iii) It is equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere.

(2) The barrier fluid system is in heavy liquid service or is not in VOC service.

(3) Each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both.

(4) Each sensor in (a)(3), above, is equipped with an audible alarm. The permittee shall determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.

(b) If any existing pumps are found to be leaking during an AVO inspection, the permittee shall follow the following procedures:

(1) The LDAR requirements specified in Condition # 022, Section D (under Source ID 400), of this plan approval, except that the permittee shall either monitor the pump using a gas analyzer within 5 calendar days to determine whether there is a leak of VOCs in the barrier fluid or designate the indications of liquids dripping as a leak.

(2) The LDAR requirements specified in Condition # 023, Section D (under Source ID 400), of this plan approval, with the following constituting the first attempts at repair and successful repair:

(i) The first attempts at repair of pumps include, but are not limited to, the following best practices, where practicable, and eliminating indications of liquids dripping.

(A) The tightening of packing gland nuts.

(B) Ensuring that the seal flush is operating at design pressure and temperature.

(ii) Successful repair is based on eliminating the visual indications of liquids dripping.

(c) If the sensor in (a)(3), above, indicates failure of the seal system, the barrier fluid system, or both based on the criterion determined in accordance with (a)(4), above, a leak is detected and the permittee shall follow the LDAR requirements specified in Condition # 023, Section D (under Source ID 400), of this plan approval. Successful repair is based on

**SECTION D. Source Level Plan Approval Requirements**

eliminating the conditions that activated the sensor.

[Note: The provisions of 40 CFR §§ 60.482-2a(a)(1) and (d) and 60.482-3a(a)–(f) serve as a basis for this plan approval condition.]

020 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

The first attempts at repair of valves in gas and light liquid service include, but are not limited to, the following best practices, where practicable:

- (a) The tightening or replacement of bonnet bolts.
- (b) The tightening of packing gland nuts.
- (c) The injection of lubricant into lubricated packing.

[Note: The provisions of 40 CFR § 60.482-7a(e)(1)–(4) serve as a basis for this plan approval condition.]

021 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

(a) Except during pressure releases, the permittee shall operate each relief valve in gas service that is subject to the LDAR requirements specified in Section D (under Source IDs 400–401), of this plan approval, with no detectable emissions, as indicated by an instrument reading of less than 500 ppmv.

(b) Except as specified in Condition # 023(b), Section D (under Source ID 400), of this plan approval, and Condition # 023, Section D (under Source ID 401), of this plan approval, the permittee shall ensure that, after a pressure release or if a rupture disc is found to be leaking VOCs at a concentration of equal to or greater than 500 ppmv, it installs a new rupture disc upstream of the relief valve as soon as practicable, but no later than 5 calendar days after the pressure release or the leak is found.

[Note: The provisions of 40 CFR § 60.482-4a(a) and (d) serve as a basis for this plan approval condition.]

022 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

(a) In addition to the requirements for open-ended valves or lines specified in Condition # 021, Section D (under Source ID 400), of this plan approval, the permittee shall operate the open-ended valves or lines in compliance with the following requirements:

- (1) The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring process fluid flow through the open-ended valve or line.
 - (2) For an open-ended valve or line that is equipped with a second valve, the valve on the process fluid end shall be closed before the second valve is closed.
 - (3) When a double block and bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves, but shall comply with the requirements of (a)(1), above, and Condition # 021, Section D (under Source ID 400), of this plan approval, at all other times.
- (b) The following open-ended valves or lines are exempt from the requirements of (a)(1)–(3), above, and Condition # 021, Section D (under Source ID 400), of this plan approval:

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(1) Open-ended valves or lines in an emergency shutdown system that are designed to open automatically in the event of a process upset.

(2) Open-ended valves or lines containing materials which would autocatalytically polymerize or would present an explosion, serious overpressure, or other safety hazard if capped or equipped with a double block and bleed system.

[Note: The provisions of 40 CFR § 60.482-6a(a)–(e) serve as a basis for this plan approval condition.]

023 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

In addition to the reason for delays of repair of fugitive emissions components specified in Condition # 023(b), Section D (under Source ID 400), of this plan approval, the permittee may delay the repair of components for the following reasons:

(a) If the repair of a component within 15 days is technically infeasible without a process unit shutdown.

(b) If the component is isolated from the process and does not remain in VOC service.

(c) If the permittee demonstrates that the expected emissions of purged material resulting from immediate repair of a valve or connector are greater than the fugitive emissions likely to result from delay of repair and, during the repair of the valve or connector, collects and destroys or recovers the purged material in a control device that complies with the requirements of 40 CFR § 60.482-10a.

[Note: The provisions of 40 CFR § 60.482-9a(a)–(c) serve as a basis for this plan approval condition.]

024 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

As applicable.

WORK PRACTICE STANDARD

(a) The vapor recovery system shall be designed and operated to recover the VOC emissions vented to them with an efficiency of 95% or greater.

MONITOR

(b) The permittee shall monitor the control devices to ensure that they are operated and maintained in conformance with their designs.

(c) Except as provided in (f)–(h), below, the permittee shall inspect the vapor collection system or closed vent system as follows:

- (1) conduct an initial inspection according to the procedures in 40 CFR § 60.485a(b); and
- (2) conduct annual visual inspections for visible, audible, or olfactory indications of leaks.
- (3) if the vapor collection system or closed vent system is constructed of ductwork, the permittee shall:
 - (i) conduct an initial inspection according to the procedures in 40 CFR § 60.485a(b); and
 - (ii) conduct annual inspections according to the procedures in 40 CFR § 60.485a(b).

WORK PRACTICE STANDARD

(d) Leaks, as indicated by an instrument reading greater than 500 ppmv above background or by visual inspections, shall be repaired as soon as practicable except as provided in (e), below.

- (1) a first attempt at repair shall be made no later than 5 calendar days after the leak is detected.
- (2) repairs shall be completed no later than 15 calendar days after the leak is detected.

(e) Delay of repair of a closed vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown or if the permittee determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be complete by the end of the next process unit shutdown.

(f) If a vapor collection system or closed vent system is operated under a vacuum, it is exempt from the inspection

**SECTION D. Source Level Plan Approval Requirements**

requirements of (c)(1)–(2), above.

(g) Any parts of the closed vent system that are designated, as described in (g)(1), below, as unsafe to inspect are exempt from the inspection requirements of (c)(1)–(2), above, if they comply with the requirements in (g)(1)–(2), below:

- (1) the permittee determines that the equipment is unsafe to inspect because inspecting personnel would be exposed to an imminent or potential danger as a consequence of complying with (c)(1)–(2), above; and
- (2) the permittee has a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times.

(h) Any parts of the vapor recovery system that are designated, as described in (h)(2), below, as difficult to inspect are exempt from the inspection requirements of (c)(1)–(2), above, if they comply with the requirements specified in (h)(1)–(3), below:

- (1) the permittee determines that the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters (7 feet) above a support surface; and
- (2) the process unit within which the vapor recovery system is located becomes an affected facility through 40 CFR §§ 60.14 or 60.15, or the permittee designates less than 3.0% of the total number of vapor recovery system equipment as difficult to inspect; and
- (3) the permittee has a written plan that requires inspection of the equipment at least once every 5 years. A closed vent system is exempt from inspection if it is operated under a vacuum.

RECORDS

(i) The permittee shall record the following:

- (1) identification of all parts of the vapor recovery system that are designated as unsafe to inspect, an explanation of why the equipment is unsafe to inspect, and the plan for inspecting the equipment;
- (2) identification of all parts of the vapor recovery system that are designated as difficult to inspect, an explanation of why the equipment is difficult to inspect, and the plan for inspecting the equipment;
- (3) for each inspection during which a leak is detected, a record of the information specified in 40 CFR § 60.486a(c);
- (4) for each inspection conducted in accordance with 40 CFR § 60.485a(b) during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected; and
- (5) for each visual inspection conducted in accordance with (c)(2), above, during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.

(j) The vapor recovery system used to comply with provisions of this subpart shall be operated at all times when emissions may be vented to them.

[Note: The provisions of 40 CFR § 60.482-10a serve as a basis for this plan approval condition.]

025 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

As applicable.

Each sampling connection system shall be equipped with a closed-purge, closed-loop, or closed-vent system, except as provided in 40 CFR § 60.482-1a(c) and the following requirements:

- (a) gases displaced during filling of the sample container are not required to be collected or captured;
- (b) containers that are part of a closed-purge system must be covered or closed when not being filled or emptied;
- (c) gases remaining in the tubing or piping between the closed-purge system valve(s) and sample container valve(s) after the valves are closed and the sample container is disconnected are not required to be collected or captured; and
- (d) each closed-purge, closed-loop, or closed-vent system shall be designed and operated to meet requirements in either (d)(1), (2), (3), or (4), below:
 - (1) return the purged process fluid directly to the process line;
 - (2) collect and recycle the purged process fluid to a process;
 - (3) capture and transport all the purged process fluid to a control device that complies with the requirements of 40 CFR § 60.482-10a; or
 - (4) collect, store, and transport the purged process fluid to any of the following systems or facilities:
 - (i) a waste management unit as defined in 40 CFR § 63.111, if the waste management unit is subject to and operated in compliance with the provisions of 40 CFR Part 63, Subpart G, applicable to Group 1 wastewater streams;
 - (ii) a treatment, storage, or disposal facility subject to regulation under 40 CFR Parts 262, 264, 265, or 266;

**SECTION D. Source Level Plan Approval Requirements**

- (iii) a facility permitted, licensed, or registered by a state to manage municipal or industrial solid waste, if the process fluids are not hazardous waste as defined in 40 CFR Part 261;
- (iv) a waste management unit subject to and operated in compliance with the treatment requirements of 40 CFR § 61.348(a), provided all waste management units that collect, store, or transport the purged process fluid to the treatment unit are subject to and operated in compliance with the management requirements of 40 CFR §§ 61.343–347; or
- (v) a device used to burn off-specification used oil for energy recovery in accordance with 40 CFR Part 279, Subpart G, provided the purged process fluid is not hazardous waste as defined in 40 CFR Part 261.

(c) in-situ sampling systems and sampling systems without purges are exempt from the requirements above.

[Note: The provisions of 40 CFR § 60.482-5a serve as a basis for this plan approval condition.]

026 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

The permittee shall ensure that any valve in gas and light liquid service, excluding a relief valve, that is authorized or approved on or after May 16, 2024, subject to the LDAR requirements specified in Section D (under Source IDs 400–401), of this plan approval, and found to be leaking during an AVO inspection, is repaired or monitored using an approved gas analyzer within 15 calendar days⁶ to determine whether it is leaking VOCs at a concentration of equal to or greater than 100 ppmv. If the valve is found to be leaking VOCs at a concentration of equal to or greater than 100 ppmv, it shall be subject to the repair and replacement requirements specified in Condition #s 008, 012–014, 021, and 023, Section D (under Source ID 400), of this plan approval, and Condition #s 012, 016–017, 019–021, and 023, Section D (under Source ID 401), of this plan approval.

[Note: The provisions of 40 CFR § 60.482-7b(b) serve as a basis for this plan approval condition.]

⁶ In accordance with Condition # 023(a), Section D (under Source ID 400), of this plan approval, the permittee is still required to make a first attempt at repair within 5 calendar days.

VII. ADDITIONAL REQUIREMENTS.**# 027 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

(a) The LDAR requirements specified under this Source ID shall apply to the same process units, piping, and fugitive emissions components indicated in Condition # 024(a), Section D (under Source ID 400), of this plan approval, in VOC service.

(b) The permittee shall provide the Department with a listing of all new process units, piping, and fugitive emissions components that are subject to the LDAR requirements specified in Section D (under Source IDs 400–401), of this plan approval, within 60 days after commencing their operation. The listing shall be categorized by process area, specify the fugitive emissions component count in each process area, include an explanation of why each fugitive emissions component designated as difficult-to-monitor or unsafe-to-monitor is designated as such, and include a written plan that requires monitoring of each unsafe-to-monitor component as frequently as practicable during safe-to-monitor times.

028 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

(a) The permittee shall demonstrate compliance with the requirements of 40 CFR §§ 60.482-1a through 60.482-10a, as applicable, for all equipment within 180 days of initial startup.

(b) Compliance with 40 CFR §§ 60.482-1a to 60.482-10a will be determined by review of records and reports, review of performance test results, and inspection using the methods and procedures specified in 40 CFR § 60.485a.

(c) The permittee may monitor at any time during the specified monitoring period (e.g., month, quarter, year), provided the monitoring is conducted at a reasonable interval after completion of the last monitoring campaign. Reasonable intervals are defined, as follows:

- (1) Monthly monitoring: monitoring events shall be separated by at least 10 calendar days.

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(2) Quarterly monitoring: monitoring events shall be separated by at least 30 calendar days.

(3) Semiannual monitoring: monitoring events shall be separated by at least 60 calendar days.

(4) Annual monitoring: monitoring events must be separated by at least 120 calendar days.

(d) If applicable, equipment that is in vacuum service is excluded from the requirements of 40 CFR §§ 60.482-2a through 60.482-10a if it is identified as required in 40 CFR § 60.486a(e)(5).

[Note: The provisions of 40 CFR § 60.482-1a(a)–(b), (d), (f)(3), and (g) serve as a basis for this plan approval condition.]

**SECTION D. Source Level Plan Approval Requirements**

Source ID: 501

Source Name: ADD'L FUGITIVE EMISSIONS COMPONENTS LDAR REQUIREMENTS (GHGS)

Source Capacity/Throughput:

I. RESTRICTIONS.

No additional requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

II. TESTING REQUIREMENTS.**# 001 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

(a) The permittee shall use an approved gas analyzer with a directed maintenance program for instrument monitoring of fugitive emissions components that are subject to the LDAR requirements specified in Section D (under Source ID 501), of this plan approval.

(b) The permittee shall ensure that the gas analyzer conforms to the following requirements specified in EPA Method 21:

(1) The equipment specifications and performance criteria contained in Section 6.0 of EPA Method 21.

(2) The requirements and procedures specified in Sections 7.0–10.0 of EPA Method 21, except that the permittee shall calibrate the gas analyzer with methane.

(c) If using a gas analyzer other than a flame ionization detector (FID), the permittee shall develop a site-specific leak definition that, except as specified in Condition # 006, Section D (under Source ID 501), of this plan approval, would provide an equivalent response to 500 ppm as methane using an FID (e.g., 10.6 eV for a photo ionization detector (PID) with a specified isobutylene concentration).

III. MONITORING REQUIREMENTS.**# 002 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

The permittee shall perform AVO inspections for all process units, piping, and fugitive emissions components that are subject to the LDAR requirements specified in Section D (under Source ID 501), of this plan approval, on a daily basis by operating personnel walk-through, as follows:

(a) For existing process units, piping, and fugitive emissions components: Upon issuance of this plan approval.

(b) For new process units, piping, and fugitive emissions components: Upon commencing operation.

IV. RECORDKEEPING REQUIREMENTS.**# 003 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

The permittee shall maintain records of the following information for each AVO inspection performed in Condition # 002, Section D (under Source ID 501), of this plan approval, for the process units, piping, and fugitive emissions components subject to the LDAR requirements specified in Section D (under Source ID 501), of this plan approval, in the operator's log or equivalent:

(a) The date and time of the inspection.

**SECTION D. Source Level Plan Approval Requirements**

- (b) The following information for each fugitive emissions component in GHG service⁷ for which a GHG leak is detected:
- (1) The identification and location.
 - (2) The instrument reading(s) of each fugitive emissions component, along with an indication of whether the reading(s) was made prior to or subsequent to repair activities.
 - (3) The following information regarding the status of repair of each fugitive emissions component:
 - (i) The following for each attempt to repair the fugitive emissions component:
 - (A) The date.
 - (B) The repair method(s) applied.
 - (ii) The digital photographing and/or tagging of each fugitive emissions component not repaired during the inspection in which the GHG leak was detected.
 - (iii) The reason(s) that a fugitive emissions component was placed on delay of repair (i.e., one or more of the reasons specified in Condition # 004(a)(2), Section D (under Source ID 501), of this plan approval), if applicable.
 - (iv) The date of successful repair of the fugitive emissions component.
 - (v) The following for the re-monitoring of a repaired fugitive emissions component that could not be repaired during the initial GHG leak finding:
 - (A) The date.
 - (B) The instrumentation or method used.

⁷ Analogous to the term "in VOC service," the term "in GHG service" means that the GHG content of the material that is contained in or contacts the component during the course of normal operations is, or may reasonably be expected to be, equal to or greater than 10%, by weight.

V. REPORTING REQUIREMENTS.

No additional reporting requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

VI. WORK PRACTICE REQUIREMENTS.**# 004 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

(a) The permittee shall repair any GHG leak detected from any fugitive emissions components subject to the requirements specified in Section D (under Source ID 501), of this plan approval, as expeditiously as practicable. A first attempt at repair must be attempted within 5 calendar days of detection, and repair must be completed no later than 15 calendar days after the GHG leak is detected, except in either of the following situations:

- (1) The owner or operator must purchase parts to complete the repair, in which case the repair must be completed no later than 10 calendar days after the receipt of the purchased parts.
- (2) The repair or replacement is technically infeasible or would be unsafe to perform during operation of the affected process unit, in which case the repair or replacement must be completed during the next scheduled process unit shutdown,

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or within 12 months, whichever is earlier.

(b) If either of the situations specified in (a)(1)–(2), above, applies to a fugitive emissions component, the permittee shall take a digital photograph of the affected component and/or tag it for identification purposes until repaired.

(c) A GHG leak is considered repaired if any of the following apply:

(1) The affected fugitive emissions component is monitored by leak-checking for fugitive emissions using an approved gas analyzer and the reading is less than the applicable ppm threshold, or equivalent response, specified in Section D (under Source ID 501), of this plan approval.

(2) No detectable emissions exist, as determined using the procedures specified in Section 8.3.2 of EPA Method 21.

(3) There is no bubbling at the leak interface using the soap solution screening procedure specified in Section 8.3.3 of EPA Method 21.

(d) The permittee shall re-monitor any replaced fugitive emissions components subject to the requirements specified in Section D (under Source ID 501), of this plan approval, for leaks within 15 calendar days after being placed back into GHG service.

005 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.1.]

The permittee shall ensure that all relief valves subject to the requirements specified in Section D (under Source ID 501), of this plan approval, are monitored and installed in accordance with Condition #s 005 and 020, Section D (under Source ID 400), of this plan approval, and Condition #s 004, 014, and 021, Section D (under Source ID 401), of this plan approval.

006 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

If using a gas analyzer other than an FID for instrument monitoring of any valve in gas and light liquid service, excluding a relief valve, that is authorized or approved on or after May 16, 2024, and subject to the LDAR requirements specified in Section D (under Source ID 501), of this plan approval, the permittee shall develop a site-specific leak definition that would provide an equivalent response to 100 ppm as methane using a FID (e.g., 2.1 eV for a PID with a specified isobutylene concentration).

[Note: The provisions of 40 CFR § 60.482-7b(b) serve as a basis for this plan approval condition.]

VII. ADDITIONAL REQUIREMENTS.**# 007 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

(a) The LDAR requirements specified under this Source ID shall apply to the following process units, piping, and fugitive emissions components in GHG service at the facility:

(1) The same process units, piping, and fugitive emissions components indicated in Condition # 024(a), Section D (under Source ID 400), of this plan approval.

(2) All aboveground natural gas piping and associated fugitive emissions components at the facility.

(b) The permittee shall provide the Department with a listing of all new process units, piping, and fugitive emissions components that are subject to the LDAR requirements specified in Section D (under Source ID 501), of this plan approval, within 60 days after commencing their operation. The listing shall be categorized by process area, specify the fugitive emissions component count in each process area, and include an explanation of why each fugitive emissions component designated as difficult-to-monitor or unsafe-to-monitor is designated as such.

**SECTION D. Source Level Plan Approval Requirements****# 008 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

Any positive indication, whether auditory, visual, olfactory, determined during an AVO inspection for the process units, piping, and/or fugitive emissions components subject to the requirements specified in Section D (under Source ID 501), of this plan approval, shall be considered a GHG leak, except as follows:

(a) If the positive indication is due to a release from any equipment or component designed by the manufacturer to protect the equipment, controller, or personnel, or to prevent groundwater contamination, gas migration, or an emergency situation.

(b) If the affected fugitive emissions component is subsequently monitored by leak-checking for fugitive emissions using an approved gas analyzer (prior to any repair activities) and the reading is less than the applicable ppm threshold, or equivalent response, specified in Section D (under Source ID 501), of this plan approval.

**SECTION D. Source Level Plan Approval Requirements**

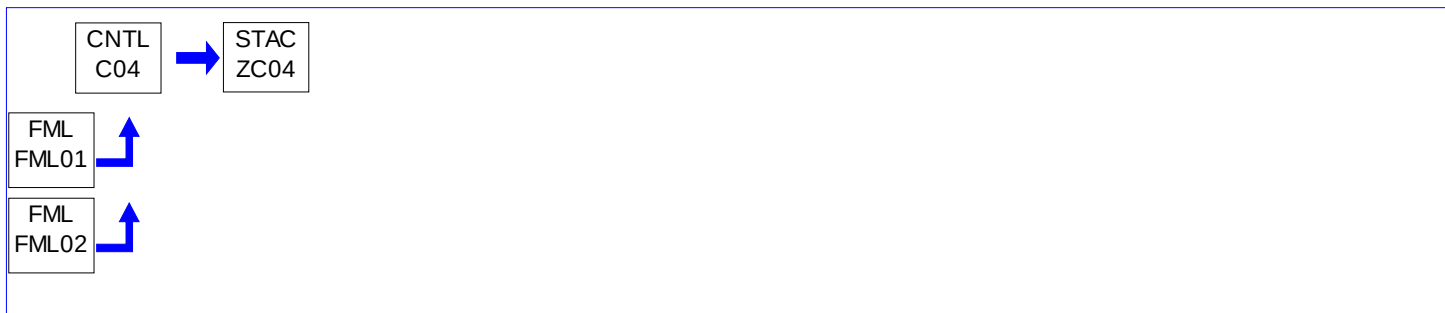
Source ID: C04

Source Name: PROJECT PHOENIX COLD FLARE

Source Capacity/Throughput:

9.452 MCF/HR

PILOT/PURGE/SWEEP GAS

**I. RESTRICTIONS.****Emission Restriction(s).****# 001 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 40 CFR §§ 60.18(b) and (c)(1), 60.112b(a)(3)(ii), and 60.482-10a(d); and 25 Pa. Code Chapter 122.]

This cold flare shall be designed for and operated with no visible emissions, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.

Control Device Efficiency Restriction(s).**# 002 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 25 Pa. Code § 127.205(1).]

The permittee shall ensure that this cold flare is designed and operated to reduce inlet VOC emissions by equal to or greater than 99.0%.

[Compliance with this streamlined plan approval condition assures compliance with the VOC control efficiency restriction of 95% indicated in 40 CFR §§ 60.112b(a)(3)(ii).]

II. TESTING REQUIREMENTS.**# 003 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 40 CFR §§ 60.18(b) and (f)(1) and (3)–(4), 60.112b(a)(3)(ii), 60.482-10a(d), and 60.485a(a) and (g)(1) and (5)–(7); and 25 Pa. Code Chapters 122 and 139.]

(a) Within 180 days after the commencement of operation of this cold flare, the permittee shall perform a stack test for the cold flare, as follows:

(1) In accordance with the provisions of 25 Pa. Code Chapter 139.

(2) While the flare is operating at maximum routine operating conditions, or under such other conditions within the capacity of the equipment as may be requested by the Department.

(3) Using the following test methods, or (an) other Department-approved test method(s), to determine compliance with the standards for flares for this cold flare:

(i) EPA Method 22 to determine compliance with the visible emission restriction specified in Condition # 001, Section D (under Source ID C04), of this plan approval. The observation period shall be 2 hours.

**SECTION D. Source Level Plan Approval Requirements**

- (ii) EPA Method 2, 2A, 2C, or 2D, as appropriate, to determine the volumetric flow rate (at standard temperature and pressure of 25 °C and 760 mm Hg, respectively) of the cold flare. The permittee shall divide this value by the unobstructed (free) cross-sectional area of the flare tip to obtain the actual exit velocity of the cold flare.
 - (iii) EPA Method 3A to determine the composition and molecular weight of the flue gas for the cold flare.
 - (iv) EPA Method 18 to determine the hydrocarbon components of the gas combusted in the cold flare.
 - (v) EPA Method 18 and ASTM D2504-88 (or the most recent revision) to determine the concentration of sample component "i" in the equation referenced in Condition # 008(a), Section D (under Source ID C04), of this plan approval.
 - (vi) ASTM D2382-88 (or the most recent revision) to determine the net heat of combustion of sample component "i" in the equation referenced in Condition # 008(a), Section D (under Source ID C04), of this plan approval, if published values are not available or cannot be calculated.
- (b) At least 90 days prior to the stack test, the permittee shall submit, to the Department for approval, the procedures for the test and a sketch with dimensions indicating the location of sampling ports and other data to ensure the collection of representative samples. A test protocol shall be approved by the Source Testing Section of the Department prior to the test.
- (c) At least 30 days prior to the stack test, the permittee shall inform the Regional Air Quality Program Manager of the Department of the date and time of the test.
- (d) Within 60 days after the stack test, the permittee shall submit two copies of the complete test report, including all operating conditions, to the Regional Air Quality Program Manager of the Department for approval.
- (e) The permittee may request an extension of time for any deadlines indicated in (a)–(d), above, with which it is unable to comply. The request must be in writing and include a justification for the extension. The Department may grant the extension for reasonable cause.

III. MONITORING REQUIREMENTS.**# 004 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

- (a) The permittee shall monitor this cold flare for the presence of a pilot flame on a continuous basis.
- (b) The permittee shall monitor the type and amount of fuel combusted in the cold flare on a daily basis.

IV. RECORDKEEPING REQUIREMENTS.**# 005 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

- (a) The permittee shall maintain records of the presence of a pilot flame for this cold flare on a continuous basis.
- (b) The permittee shall maintain records of the type and amount of fuel combusted in the cold flare on a daily basis.

V. REPORTING REQUIREMENTS.**# 006 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 40 CFR § 60.115b(d)(1) and (3) and 25 Pa. Code Chapter 122.]

The permittee shall submit, to the Department, the following reports for this cold flare:

- (a) A report containing the measurements required in Condition # 003(a)–(b) and (e)–(f), Section D (under Source ID C04), of this plan approval, within 60 days after the stack test.

**SECTION D. Source Level Plan Approval Requirements**

- (b) A semi-annual report indicating all periods of operation during which the pilot flame was absent.
- (c) The report indicated in (b), above, shall be submitted according to the following schedule:
 - (1) By January 31, of each year, for the period covering July 1–December 31, of the previous year.
 - (2) By July 31, of each year, for the period covering January 1–June 30, of the same year.

VI. WORK PRACTICE REQUIREMENTS.**# 007 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 40 CFR §§ 60.18(b) and (f)(3), 60.112b(a)(3)(ii), 60.482-10a(d), and 60.485a(g)(4); and 25 Pa. Code Chapter 122.]

(a) The permittee shall use the equation indicated in 40 CFR § 60.485a(g)(4) to calculate the net heating value of the gas combusted in this cold flare.

(b) The permittee shall use the equation indicated in 40 CFR § 60.485a(g)(3) to calculate the maximum permitted velocity for the cold flare.

008 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 40 CFR §§ 60.18(b) and (f)(2), 60.112b(a)(3)(ii), 60.482-10a(d), and 60.485a(g)(2); and 25 Pa. Code Chapter 122.]

The permittee shall use an infrared sensor, or other Department-approved device, to monitor this flare for the presence of a pilot flame.

009 [25 Pa. Code §127.12b]**Plan approval terms and conditions.**

[Additional authority for this plan approval condition is also derived from 40 CFR §§ 60.18(b), (c)(2), (3)(ii), and (5), and (d), 60.112b(a)(3)(ii), and 60.482-10a(d)–(e); and 25 Pa. Code Chapter 122.]

The permittee shall ensure that this cold flare is operated and maintained in conformance with its design, and in accordance with the following requirements:

(a) A flame shall be present at all times.

(b) The gas combusted in the cold flare shall have a minimum net heating value of 300 Btu/scf. The net heating value of the gas combusted in the cold flare shall be determined as indicated in Condition # 007(a), Section D (under Source ID C04), of this plan approval.

(c) The actual exit velocity of the low-pressure flare tip of the cold flare shall be less than the maximum permitted velocity for air-assisted flares. The maximum permitted velocity shall be determined as indicated in Condition # 007(b), Section D (under Source ID C04), of this plan approval.

VII. ADDITIONAL REQUIREMENTS.**# 010 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

This source shall consist of an elevated (Project Phoenix) cold flare equipped with low-pressure (air-assisted) and high-pressure (unassisted) flare tips. The cold flare shall be used to flare refrigerated ethane streams that do not contain water.

**SECTION E. Source Group Plan Approval Restrictions.**

Group Name: GROUP 1

Group Description: Refrigerated Ethane Storage Tank Conditions

Sources included in this group

ID	Name
124	REFRIGERATED ETHANE STORAGE TANK (600 MBBL)
125	REFRIGERATED ETHANE STORAGE TANK (600 MBBL)

I. RESTRICTIONS.

No additional requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

II. TESTING REQUIREMENTS.

No additional testing requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

III. MONITORING REQUIREMENTS.

001 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

The permittee shall monitor the ethane throughput for this refrigerated ethane storage tank on a daily basis.

IV. RECORDKEEPING REQUIREMENTS.

002 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

[Additional authority for this plan approval condition is derived from 40 CFR § 60.115b(d)(2) and 25 Pa. Code Chapter 122.]

The permittee shall maintain records of all periods of operation of this refrigerated ethane storage tank during which the pilot flame of the associated cold flare (Source ID C04) is absent.

003 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

[Additional authority for this plan approval condition is derived from 40 CFR § 60.116b(b) and 25 Pa. Code Chapter 122.]

The permittee shall maintain records of the dimensions of this refrigerated ethane storage tank, and an analysis showing the capacity of the storage tank, in a readily-accessible format for the life of the storage tank.

004 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

[Additional authority for this plan approval condition is derived from 40 CFR § 60.116b(c) and 25 Pa. Code Chapter 122.]

The permittee shall maintain records of the following operating parameters for the ethane stored in this refrigerated ethane storage tank:

- (a) The throughput, on a daily basis.
- (b) The starting and ending dates of storage (if not continuous).
- (c) The highest calendar-month average storage temperature.
- (d) The maximum true vapor pressure as stored.

V. REPORTING REQUIREMENTS.

No additional reporting requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements).

**SECTION E. Source Group Plan Approval Restrictions.****VI. WORK PRACTICE REQUIREMENTS.****# 005 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

[Additional authority for this plan approval condition is derived from 40 CFR § 60.112b(a)(3)(i) and 25 Pa. Code Chapter 122.]

The permittee shall ensure that emissions from this refrigerated ethane storage tank are controlled by a closed vent system designed to collect all vapors and gases discharged from the storage tank, and that the storage tank is operated with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background and visual inspections, as determined in accordance with the provisions of 40 CFR § 60.485a(b).

VII. ADDITIONAL REQUIREMENTS.**# 006 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

This source shall consist of a 600,000-bbl refrigerated ethane storage tank with vapor recovery system. Ethane vapors shall be condensed to a liquid state by the vapor recovery system before being hard-piped back to the storage tank.

**SECTION F. Alternative Operation Requirements.**

No Alternative Operations exist for this Plan Approval facility.

**SECTION G. Emission Restriction Summary.**

Source Id	Source Description		
141	WSAC SYSTEMS (2)		
Emission Limit			Pollutant
0.020	gr/DRY FT3	From Each WSAC System	TSP
0.550	Tons/Yr	12-Month Rolling Sum, Calculated Monthly	TSP

Site Emission Restriction Summary

Emission Limit	Pollutant
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**SECTION H. Miscellaneous.**

(a) This plan approval (APS ID 998548, Auth ID 1532838) is an extension of Plan Approval No. 23-0119J, which was originally issued on February 12, 2021 (APS ID 998548, Auth ID 1282412), and previously extended on February 7, 2024 (APS ID 998548, Auth ID 1462394).

(b) The following is a listing of the changes reflected in this plan approval:

- (1) The title of the responsible official, as indicated on the cover page of the previously-extended plan approval (same location in this plan approval), has been changed to Vice President–Marcus Hook Operations.
- (2) The permit contact person, as indicated on the cover page of the previously-extended plan approval (same location in this plan approval), has been changed to Keith Graver, Senior Specialist–Environmental Compliance, (610) 859-1276, keith.graver@energytransfer.com.
- (3) In accordance with Condition # 001(a)(1), Section C, of Plan Approval No. 23-0119K, the requirements specified in Section D (under Source ID 103), of the previously-extended plan approval, have been superseded and replaced by the requirements specified in Section D (under Source IDs 400–401 and 501), of Plan Approval No. 23-0119K. These requirements are specified in Section D (under Source IDs 400–401 and 501), of this plan approval.
- (4) A footnote indicating that the permittee shall not be required to surrender VOC ERCs under this plan approval if it has already surrendered the VOC ERCs required to be surrendered under Plan Approval No. 23-0119K (and vice versa)" has been added to Condition # 001, Section C, of the previously-extended plan approval (Condition # 002, Section C, of this plan approval).
- (5) An additional requirement that, for any fugitive emissions components that are subject to the VOC LDAR requirements specified in Section D (under Source IDs 400–401), of this plan approval, and the GHG LDAR requirements specified in Section D (under Source ID 501), of this plan approval, concurrently, the permittee shall, in all cases, apply the more stringent requirements, has been added as Condition # 001, Section C, of this plan approval.
- (6) Condition # 006, Section E, of the previously-extended plan approval, has been removed.



***** End of Report *****
