



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
AIR QUALITY PROGRAM

PLAN APPROVAL

Issue Date:

Effective Date:

Expiration Date:

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. 63-00968A

Federal Tax Id - Plant Code: 30-0528059-17

Owner Information	
Name: MARKWEST LIBERTY MIDSTREAM & RESOURCES LLC	
Mailing Address: 1515 ARAPAHOE ST STE 1600 DENVER, CO 80202-2137	
Plant Information	
Plant: MARKWEST LIBERTY MIDSTREAMSMITH COMP STA	
Location: 63 Washington County	63953 Smith Township
SIC Code: 1311 Mining - Crude Petroleum And Natural Gas	
Responsible Official	
Name: JOHN MOLLENKOPF	
Title: SR VP & COO	
Phone (303) 825 - 9200	
Plan Approval Contact Person	
Name: NATHAN WHELDON	
Title: SR ENV ENG	
Phone: (303) 542 - 0686	
[Signature] _____ MARK A. WAYNER, SOUTHWEST REGION AIR PROGRAM MANAGER	



Plan Approval Description

This Plan Approval is to allow the construction and temporary operation of eight new natural gas compressor engines and increased throughput of one tri ethylene glycol dehydrator by MarkWest Liberty Midstream and Resources, LLC at its Smith Compressor Station located in Smith Township, Washington County.



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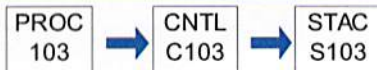
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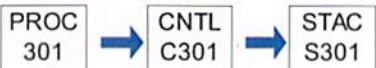
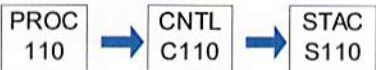
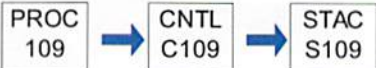
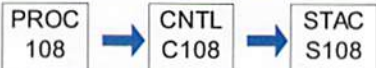
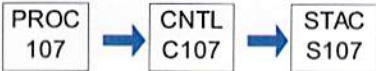
**SECTION A. Plan Approval Inventory List**

Source ID	Source Name	Capacity/Throughput	Fuel/Material
103	WAUKESHA P9390GSI COMPRESSOR ENGINE #3 (1,980 BHP)		
104	WAUKESHA P9390GSI COMPRESSOR ENGINE #4 (1,980 BHP)		
105	WAUKESHA P9390GSI COMPRESSOR ENGINE #5 (1,980 BHP)		
106	WAUKESHA P9390GSI COMPRESSOR ENGINE #6 (1,980 BHP)		
107	WAUKESHA P9390GSI COMPRESSOR ENGINE #7 (1,980 BHP)		
108	WAUKESHA P9390GSI COMPRESSOR ENGINE #8 (1,980 BHP)		
109	WAUKESHA P9390GSI COMPRESSOR ENGINE #9 (1,980 BHP)		
110	WAUKESHA P9390GSI COMPRESSOR ENGINE #10 (1,980 BHP)		
301	130MMSCFD TEG DEHY WITH 2.0MMBTU/HR REBOILER		
C103	THREE-WAY CATALYST ENGINE #3		
C104	THREE-WAY CATALYST ENGINE #4		
C105	THREE-WAY CATALYST ENGINE #5		
C106	THREE-WAY CATALYST ENGINE #6		
C107	THREE-WAY CATALYST ENGINE #7		
C108	THREE-WAY CATALYST ENGINE #8		
C109	THREE-WAY CATALYST ENGINE #9		
C110	THREE-WAY CATALYST ENGINE #10		
C301	SUPERIOR FABRICATION 2.1MMBTU/HR 48" ENCLOSED FLARE		
S103	ENGINE #3 STACK		
S104	ENGINE #4 STACK		
S105	ENGINE #5 STACK		
S106	ENGINE #6 STACK		
S107	ENGINE #7 STACK		
S108	ENGINE #8 STACK		
S109	ENGINE #9 STACK		
S110	ENGINE #10 STACK		
S301	DEHYDRATOR STACK		

PERMIT MAPS



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 15 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(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(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.****Emission Restriction(s).****# 001 [25 Pa. Code §123.1]****Prohibition of certain fugitive emissions**

(a) No person may permit the emission into the outdoor atmosphere of fugitive air contaminant from a source other than the following:

- (1) Construction or demolition of buildings or structures.
- (2) Grading, paving and maintenance of roads and streets.
- (3) Use of roads and streets. Emissions from material in or on trucks, railroad cars and other vehicular equipment are not considered as emissions from use of roads and streets.
- (4) Clearing of land.
- (5) Stockpiling of materials.
- (6) Open burning operations.
- (7) Blasting in open pit mines. Emissions from drilling are not considered as emissions from blasting.

(8) Coke oven batteries, provided the fugitive air contaminants emitted from any coke oven battery comply with the standards for visible fugitive emissions in § § 123.44 and 129.15 (relating to limitations of visible fugitive air contaminants from operation of any coke oven battery, and coke pushing operations).

(9) Sources and classes of sources other than those identified in paragraphs (1)-(8), for which the operator has obtained a determination from the Department that fugitive emissions from the source, after appropriate control, meet the following requirements:

- (i) the emissions are of minor significance with respect to causing air pollution; and
- (ii) the emissions are not preventing or interfering with the attainment or maintenance of any ambient air quality standard.

(b) An application form for requesting a determination under either subsection (a)(9) or 129.15(c) is available from the Department. In reviewing these applications, the Department may require the applicant to supply information including, but not limited to, a description of proposed control measures, characteristics of emissions, quantity of emissions, and ambient air quality data and analysis showing the impact of the source on ambient air quality. The applicant shall be required to demonstrate that the requirements of subsections (a)(9) and (c) and 123.2 (relating to fugitive particulate matter) or of the requirements of 129.15(c) have been satisfied. Upon such demonstration, the Department will issue a determination, in writing, either as an operating permit condition, for those sources subject to permit requirements under the act, or as an order containing appropriate conditions and limitations.

(c) A person responsible for any source specified in subsections (a)(1) -- (7) or (9) shall take all reasonable actions to prevent particulate matter from becoming airborne. These actions shall include, but not be limited to, the following:

- (1) Use, where possible, of water or chemicals for control of dust in the demolition of buildings or structures, construction operations, the grading of roads, or the clearing of land.
- (2) Application of asphalt, oil, water or suitable chemicals on dirt roads, material stockpiles and other surfaces which may give rise to airborne dusts.
- (3) Paving and maintenance of roadways.
- (4) Prompt removal of earth or other material from paved streets onto which earth or other material has been transported by trucking or earth moving equipment, erosion by water, or other means.

**SECTION C. Site Level Plan Approval Requirements**

(d) The requirements contained in subsection (a) and 123.2 do not apply to fugitive emissions arising from the production of agricultural commodities in their unmanufactured state on the premises of the farm operation.

002 [25 Pa. Code §123.2]**Fugitive particulate matter**

A person may not permit fugitive particulate matter to be emitted into the outdoor atmosphere from a source specified in 123.1(a)(1) -- (9) (relating to prohibition of certain fugitive emissions) if such emissions are visible at the point the emissions pass outside the person's property.

003 [25 Pa. Code §123.31]**Limitations**

The Owner/Operator may not permit the emission into the outdoor atmosphere of any malodorous air contaminants from any source in such a manner that the malodors are detectable outside of the property of the Facility.

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

A facility-wide inspection shall be conducted at a minimum of once each day that the Facility is visited by the Owner/Operator, during daylight hours, and while the sources are operating. The facility-wide inspection shall be conducted for the presence of the following:

- a. Visible stack emissions;
- b. Fugitive emissions; and
- c. Potentially objectionable odors at the property line.

If visible stack emissions, fugitive emissions, or potentially objectionable odors are apparent, the Owner/Operator shall take corrective action. Records of each inspection shall be maintained in a log and at the minimum include the date, time, name and title of the observer, along with any corrective action taken as a result.

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

The Owner/Operator shall maintain the following comprehensive and accurate records:

- a. Monthly hours of operation for each engine and each flare.
- b. Monthly fuel consumption for each engine and each flare.
- c. Records including a description of testing methods, results, all engine operating data collected during tests, and a copy of the calculations performed to determine compliance with emission standards for each internal combustion engine.
- d. Copies of the report that demonstrates that the engines were operating at rated bhp and speed conditions during performance testing.
- e. Copies of the manufacturer's recommended maintenance schedule for all air contamination sources and air cleaning devices including each engine, dehydrator, catalyst, flare, and VRU.
- f. Records of any maintenance conducted on each engine, dehydrator, catalyst, flare, and VRU.
- g. Records of catalyst inlet and outlet temperature readings performed at a minimum of once each month on each Waukesha P9390GSI engine operated during the month.
- h. The dehydrator VOC and benzene emissions using GRI-GLYCalc data from no less recent than the previous year if the natural gas composition has changed or an alternative method approved by the Department.
- i. Records of actual throughput per day and the glycol circulation rate for the dehydrator.
- j. Records of a fractional natural gas analysis performed once each month on the inlet natural gas to the facility.

**SECTION C. Site Level Plan Approval Requirements**

- k. Records of the date, time, and approximate duration of each blowdown or emergency shutdown at the facility.
 l. Records of facility-wide inspections including the date, time, name, and title of the observer, along with any corrective action taken as a result.

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

All logs and required records shall be maintained on site for a minimum of five years and shall be made available to the Department upon request.

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

The Owner/Operator of each stationary source emitting criteria pollutants (including but not limited to NO_x, CO, VOC [including formaldehyde], SO_x, PM₁₀, and PM_{2.5}), HAP, greenhouse gases (GHG) in the form of CO₂ equivalent (CO_{2e}), and GHG on a mass-basis shall provide the Department with a statement, in a form as the Department may prescribe, for classes or categories of sources, showing the actual emissions of criteria pollutants, HAP (per the Department's Emissions Inventory Reporting Instructions), GHG in the form of CO_{2e}, and GHG on a mass-basis from that source for each reporting period. A description of the method used to calculate the emissions and the time period over which the calculation is based shall be included. The statement shall also contain a certification by a company officer or the plant manager that the information contained in the statement is accurate.

008 [25 Pa. Code §135.3]**Reporting**

Annual emission reporting shall be conducted as follows:

- The Owner/Operator shall submit by March 1 of each year, a source report for the preceding calendar year. The report shall include information for all previously reported sources, new sources which were first operated during the preceding calendar year, and sources modified during the same period which were not previously reported.
- A person who received initial notification by the Department that a source report is necessary shall submit an initial source report within 60 days after receiving the notification or by March 1 of the year following the year for which the report is required, whichever is later.
- A source Owner/Operator may request an extension of time from the Department for the filing of a source report, and the Department may grant the extension for reasonable cause.

009 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4]**Subpart A - General Provisions****Address.**

The Facility is subject to New Source Performance Standards for Stationary Spark Ignition Internal Combustion Engines (40 CFR Part 60 Subpart JJJJ) and for Crude Oil and Natural Gas Production, Transmission and Distribution (40 CFR Part 60 Subpart OOOO); and National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities (40 CFR Part 63 Subpart HH) and for Stationary Reciprocating Internal Combustion Engines (40 CFR Part 63 Subpart ZZZZ). In accordance with 40 CFR §60.4 and 40 CFR §63.9, copies of all requests, reports, applications, submittals and other communications regarding the affected facilities shall be forwarded to both EPA and the Department at the addresses listed below unless otherwise noted.

Director	PADEP
Air Protection Section	Air Quality Program
Mail Code 3AP00	400 Waterfront Drive
US EPA, Region III	Pittsburgh, PA 15222-4745
1650 Arch Street	
Philadelphia, PA 19101-2029	

010 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.7]**Subpart A - General Provisions****Notification and record keeping.**

The Owner/operator shall provide EPA with the notifications required by 40 CFR § 60.7. Required notifications may include but are not necessarily limited to: date of commencement of construction (within 30 days after starting construction), actual

**SECTION C. Site Level Plan Approval Requirements**

start-up date (within 15 days after equipment start-up), physical or operational changes which may increase the emission rate of any air pollutant to which a standard applies (60 days or as soon as practicable before equipment start-up), and opacity observations (within 30 days).

VI. WORK PRACTICE REQUIREMENTS.**# 011 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

All air contamination sources and controls authorized under this Plan Approval shall be operated per the manufacturer's specifications and maintained according to the manufacturer's maintenance schedule. Manufacturer's specifications include, but are not limited to, the following:

- a. Catalyst inlet temperature for the Johnson Matthey three-way catalysts installed on the Waukesha engines shall be maintained at a minimum of 850°F under all operating conditions excluding startup, shutdown, and malfunction.
- b. Johnson Matthey three-way catalysts installed on the Waukesha engines shall be operated with automatic air/fuel ratio controllers.

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

Upon completion of the Initial Operating Permit Inspection and determination by the Department that the source(s) covered by this Plan Approval are in compliance with all conditions of the Plan Approval, and at least 60 days prior to the expiration date of the Plan Approval, the Owner/Operator shall submit a State Only Operating Permit (SOOP) application.

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

If, at any time, the Department has cause to believe that air contaminant emissions from the sources listed in this Plan Approval may be in excess of the limitations specified in, or established pursuant to this plan approval or the permittee's operating permit, the permittee may be required to conduct test methods and procedures deemed necessary by the Department to determine the actual emissions rate. Such testing shall be conducted in accordance with 25 Pa. Code Chapter 139, where applicable, and in accordance with any restrictions or limitations established by the Department at such time as it notifies the company that testing is required.

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

The Owner/Operator shall submit requests to extend the temporary operation period at least 15 days prior to the expiration date of any authorized period of temporary operation until the source(s), and modifications to existing source(s), covered by this authorization are incorporated into an issued SOOP for this facility.

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

Upon determination by the Owner/Operator that the source(s) covered by this Plan Approval are in compliance with all conditions of the Plan Approval the Owner/Operator shall contact the Department's reviewing engineer and schedule the Initial Operating Permit Inspection.

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

The Owner/Operator shall comply with all additional applicable requirements of 40 CFR Part 60 Subpart OOOO, effective October 15, 2012.

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

Malfunction reporting shall be conducted as follows:

- a. The Owner/Operator shall report each malfunction that occurs at this Facility that poses an imminent and substantial danger to the public health and safety or the environment or which it should reasonably believe may result in citizen complaints to the Department. For purposes of this condition, a malfunction is defined as any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment or source to operate in a normal or usual manner that may

**SECTION C. Site Level Plan Approval Requirements**

result in an increase in the emission of air contaminants. Examples of malfunctions that may result in citizen complaints include but are not limited to: large dust plumes, heavy smoke, a spill or release that results in a malodor that is detectable outside the property of the person on whose land the source is being operated.

b. When the malfunction poses an imminent and substantial danger to the public health and safety or the environment, the notification shall be submitted to the Department no later than one hour after the incident. All other malfunctions that must be reported under subsection (a) shall be reported to the Department no later than the next business day.

c. The notice shall describe the following:

- Name and location of the facility;
- Nature and cause of the malfunction;
- Time when the malfunction or breakdown was first observed;
- Expected duration of excess emissions; and
- Estimated rate of emissions.

d. The owner or operator shall notify the Department immediately when corrective measures have been accomplished.

e. Subsequent to the malfunction, the owner/operator shall submit a full written report to the Department including the items identified in (c) and corrective measures taken on the malfunction within 15 days, if requested.

f. The owner/operator shall submit reports on the operation and maintenance of the source to the Regional Air Program Manager at such intervals and in such form and detail as may be required by the Department. Information required in the reports may include, but is not limited to, process weight rates, firing rates, hours of operation, and maintenance schedules.

g. Malfunctions shall be reported to the Department at the following address:

PA DEP
Office of Air Quality
400 Waterfront Drive
Pittsburgh, PA 15222-4745
(412) 442-4000

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

New air contamination sources and air cleaning devices authorized to be installed at the Facility under this Plan Approval are as follows:

- Eight (8) Waukesha, Model No. P9390GSI, rich-burn spark ignition natural gas-fired engines, 1,980 bhp @ 1,200 rpm; controlled by Johnson Matthey, Model No. QXH-O-90-Quad (or equivalent), NSCR units; regulated by Altronic EPC-100 (or equivalent), automatic air/fuel ratio controllers.

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

This Plan Approval is to allow the construction and temporary operation of eight new natural gas compressor engines and increased throughput of one tri ethylene glycol dehydrator by MarkWest Liberty Midstream and Resources, LLC at its Smith Compressor Station located in Smith Township, Washington County.

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

New air contamination sources and air cleaning devices authorized to continue construction with increased throughput at the Facility under this Plan Approval are as follows:

- One (1) tri ethylene glycol dehydrator, 130 MMscf/day (previously 40 MMscf/day); equipped with flash tank and flash gas recycle/recompression; regenerator controlled by a SFI 48" enclosed flare (or equivalent), rated at 2.1 MMBtu/hr.

**SECTION C. Site Level Plan Approval Requirements****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).

IX. COMPLIANCE SCHEDULE.

No compliance milestones exist.



SECTION D. Source Level Plan Approval Requirements

Source ID: 103 Source Name: WAUKESHA P9390GSI COMPRESSOR ENGINE #3 (1,980 BHP)
Source Capacity/Throughput:

Conditions for this source occur in the following groups: G01



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: 104

Source Name: WAUKESHA P9390GSI COMPRESSOR ENGINE #4 (1,980 BHP)

Source Capacity/Throughput:

Conditions for this source occur in the following groups: G01

**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: 105 Source Name: WAUKESHA P9390GSI COMPRESSOR ENGINE #5 (1,980 BHP)

Source Capacity/Throughput:

Conditions for this source occur in the following groups: G01



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: 106 Source Name: WAUKESHA P9390GSI COMPRESSOR ENGINE #6 (1,980 BHP)
Source Capacity/Throughput:

Conditions for this source occur in the following groups: G01



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: 107

Source Name: WAUKESHA P9390GSI COMPRESSOR ENGINE #7 (1,980 BHP)

Source Capacity/Throughput:

Conditions for this source occur in the following groups: G01

**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: 108

Source Name: WAUKESHA P9390GSI COMPRESSOR ENGINE #8 (1,980 BHP)

Source Capacity/Throughput:

Conditions for this source occur in the following groups: G01

**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: 109

Source Name: WAUKESHA P9390GSI COMPRESSOR ENGINE #9 (1,980 BHP)

Source Capacity/Throughput:

Conditions for this source occur in the following groups: G01

**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: 110

Source Name: WAUKESHA P9390GSI COMPRESSOR ENGINE #10 (1,980 BHP)

Source Capacity/Throughput:

Conditions for this source occur in the following groups: G01

**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.

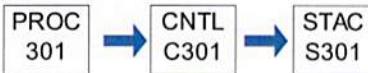
No additional requirements exist except as provided in other sections of this plan approval including Section B (Plan Approval General Requirements) and/or Section E (Source Group Restrictions).

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

Source ID: 301

Source Name: 130MMSCFD TEG DEHY WITH 2.0MMBTU/HR REBOILER

Source Capacity/Throughput:

**I. RESTRICTIONS.****Emission Restriction(s).**

001 [25 Pa. Code §123.21]

General

The Owner/Operator may not permit the emission into the outdoor atmosphere of sulfur oxides from the flare stack in a manner that the concentration of the sulfur oxides, expressed as SO₂, in the effluent gas exceeds 500 parts per million, by volume, dry basis.

002 [25 Pa. Code §127.12b]

Plan approval terms and conditions.

Visible emissions from the flare stack shall not exceed the following limitations:

- Equal to or greater than 10% opacity for a period or periods aggregating more than three minutes in any one hour.
- Equal to or greater than 30% opacity at any time.

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.

003 [40 CFR Part 63 NESHAPS for Source Categories §40 CFR 63.774]

Subpart HH - National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities Recordkeeping requirements.

Recordkeeping requirements.

- N/A
- N/A
- N/A

d.

1) An owner or operator of a glycol dehydration unit that meets the exemption criteria in §63.764(e)(1)(i) or §63.764(e)(1)(ii) shall maintain the records specified in paragraph (d)(1)(i) or paragraph (d)(1)(ii) of this section, as appropriate, for that glycol dehydration unit.

- The actual annual average natural gas throughput (in terms of natural gas flowrate to the glycol dehydration unit per day) as determined in accordance with §63.772(b)(1), or
 - The actual average benzene emissions (in terms of benzene emissions per year) as determined in accordance with §63.772(b)(2).
- 2) N/A

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

e. N/A
f. N/A

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.**# 004 [40 CFR Part 63 NESHAPS for Source Categories §40 CFR 63.760]****Subpart HH - National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities
Applicability and designation of affected source.**

The tri ethylene glycol dehydrator, approved to be installed under this plan approval, is subject to 40 CFR Part 63 Subpart HH – National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities.

005 [40 CFR Part 63 NESHAPS for Source Categories §40 CFR 63.761]**Subpart HH - National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities
Definitions.**

All terms used in 40 CFR Part 63 Subpart HH shall have the meaning given in 40 CFR §63.761 or else in the Clean Air Act and 40 CFR Part 63 Subpart A.

006 [40 CFR Part 63 NESHAPS for Source Categories §40 CFR 63.772]**Subpart HH - National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities
Test methods, compliance procedures, and compliance demonstrations.**

Test methods, compliance procedures, and compliance demonstrations.

a. N/A

b. Determination of glycol dehydration unit flowrate or benzene emissions. The procedures of this paragraph shall be used by an owner or operator to determine glycol dehydration unit natural gas flowrate or benzene emissions to meet the criteria for an exemption from control requirements under §63.764(e)(1).

1) The determination of actual flowrate of natural gas to a glycol dehydration unit shall be made using the procedures of either paragraph (b)(1)(i) or (b)(1)(ii) of this section.

i. The owner or operator shall install and operate a monitoring instrument that directly measures natural gas flowrate to the glycol dehydration unit with an accuracy of plus or minus 2 percent or better. The owner or operator shall convert annual natural gas flowrate to a daily average by dividing the annual flowrate by the number of days per year the glycol dehydration unit processed natural gas.

ii. The owner or operator shall document, to the Administrator's satisfaction, that the actual annual average natural gas flowrate to the glycol dehydration unit is less than 85 thousand standard cubic meters per day.

2) The determination of actual average benzene emissions from a glycol dehydration unit shall be made using the procedures of either paragraph (b)(2)(i) or (b)(2)(ii) of this section. Emissions shall be determined either uncontrolled, or with federally enforceable controls in place.

i. The owner or operator shall determine actual average benzene emissions using the model GRI-GLYCalcTM, Version 3.0 or higher, and the procedures presented in the associated GRI-GLYCalcTM Technical Reference Manual. Inputs to the

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

model shall be representative of actual operating conditions of the glycol dehydration unit and may be determined using the procedures documented in the Gas Research Institute (GRI) report entitled "Atmospheric Rich/Lean Method for Determining Glycol Dehydrator Emissions" (GRI-95/0368.1); or

ii. The owner or operator shall determine an average mass rate of benzene emissions in kilograms per hour through direct measurement using the methods in §63.772(a)(1)(i) or (ii), or an alternative method according to §63.7(f). Annual emissions in kilograms per year shall be determined by multiplying the mass rate by the number of hours the unit is operated per year. This result shall be converted to megagrams per year.

c. N/A

d. N/A

e. N/A

f. N/A

g. N/A

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

Group Name: G01

Group Description: Waukesha P9390GSI Compressor Engines

Sources included in this group

ID	Name
103	WAUKESHA P9390GSI COMPRESSOR ENGINE #3 (1,980 BHP)
104	WAUKESHA P9390GSI COMPRESSOR ENGINE #4 (1,980 BHP)
105	WAUKESHA P9390GSI COMPRESSOR ENGINE #5 (1,980 BHP)
106	WAUKESHA P9390GSI COMPRESSOR ENGINE #6 (1,980 BHP)
107	WAUKESHA P9390GSI COMPRESSOR ENGINE #7 (1,980 BHP)
108	WAUKESHA P9390GSI COMPRESSOR ENGINE #8 (1,980 BHP)
109	WAUKESHA P9390GSI COMPRESSOR ENGINE #9 (1,980 BHP)
110	WAUKESHA P9390GSI COMPRESSOR ENGINE #10 (1,980 BHP)

I. RESTRICTIONS.**Emission Restriction(s).****# 001 [25 Pa. Code §123.13]****Processes**

The Owner/Operator may not permit the emission into the outdoor atmosphere of particulate matter from compressor engine stacks in excess of 0.04 gr/dscf.

002 [25 Pa. Code §123.21]**General**

The Owner/Operator may not permit the emission into the outdoor atmosphere of sulfur oxides from compressor engine stacks in a manner that the concentration of the sulfur oxides, expressed as SO₂, in the effluent gas exceeds 500 parts per million, by volume, dry basis.

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

Visible emissions from each engine stack shall not exceed the following limitations:

- Equal to or greater than 10% opacity for a period or periods aggregating more than three minutes in any one hour.
- Equal to or greater than 30% opacity at any time.

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

Emissions from each P9390GSI compressor engine shall be limited to the following:

At rated bhp and speed:

- NO_x – 0.20 g/bhp-hr
- CO – 0.26 g/bhp-hr
- VOC – 0.12 g/bhp-hr

At all operating conditions excluding startup, shutdown, and malfunction:

- NO_x – 0.87 lb/hr
- CO – 1.14 lb/hr
- VOC – 0.53 lb/hr

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

The Owner/Operator shall perform NO_x and CO emission tests upon each Waukesha P9390GSI compressor engine at the Facility according to the requirements of 25 Pa. Code Chapter 139, 40 CFR §60.4243, and 40 CFR §60.4244. Initial emission testing is required within 180 days of startup of each compressor engine. Subsequent testing shall be performed within twelve (12) months of initial stack testing and annually thereafter. EPA Method stack testing shall be conducted for

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

the initial stack test. Portable analyzer testing according to ASTM Method D6522-00 or other portable methods if approved by the Department and included in Table 2 to Subpart JJJJ of Part 60 are acceptable for subsequent annual testing.

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

The Owner/Operator shall perform VOC emission tests upon each Waukesha P9390GSI compressor engine at the Facility according to the requirements of 40 CFR §§60.4243 and 60.4244. These requirements are included as compressor engine source group conditions. Initial emission testing is required within one hundred eighty (180) days of startup of each compressor engine. Subsequent VOC testing shall be performed every 8,760 hours or 3 years, whichever comes first. EPA Method stack testing shall be conducted for the initial stack test. Portable analyzer testing according to ASTM Methods D6522-00 and D6348-03, or other methods included in Table 2 to Subpart JJJJ of Part 60 are acceptable for subsequent testing.

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

Performance testing shall be conducted as follows:

- a. The Owner/Operator shall submit three copies of a pre-test protocol to the Department for review at least 45 days prior to the performance of any EPA reference method stack test. The Owner/Operator shall submit three copies of a one-time protocol to the Department for review for the use of a portable analyzer and may repeat portable analyzer testing without additional protocol approvals provided that the same method and equipment are used. All proposed performance test methods shall be identified in the pre-test protocol and approved by the Department prior to testing.
- b. The Owner/Operator shall notify the Regional Air Quality Manager at least 15 days prior to any performance test so that an observer may be present at the time of the test. Notification shall also be sent to the Division of Source Testing and Monitoring. Notification shall not be made without prior receipt of a protocol acceptance letter from the Department.
- c. Pursuant to 40 CFR Part 60.8(a), a complete test report shall be submitted to the Department no later than 60 calendar days after completion of the on-site testing portion of an emission test program.
- d. Pursuant to 25 Pa. Code Section 139.53(b) a complete test report shall include a summary of the emission results on the first page of the report indicating if each pollutant measured is within permitted limits and a statement of compliance or non-compliance with all applicable permit conditions. The summary results will include, at a minimum, the following information:
 1. A statement that the owner or operator has reviewed the report from the emissions testing body and agrees with the findings.
 2. Permit number(s) and condition(s) which are the basis for the evaluation.
 3. Summary of results with respect to each applicable permit condition.
 4. Statement of compliance or non-compliance with each applicable permit condition.
- e. Pursuant to 25 Pa. Code § 139.3 all submittals shall meet all applicable requirements specified in the most current version of the Department's Source Testing Manual.
- f. All testing shall be performed in accordance with the provisions of Chapter 139 of the Rules and Regulations of the Department of Environmental Protection.
- g. Pursuant to 25 Pa. Code Section 139.53(a)(1) and 139.53(a)(3) all submittals, besides notifications, shall be accomplished through PSIMS*Online available through <https://www.depgreenport.state.pa.us/ecom/Login.jsp> when it becomes available. If internet submittal can not be accomplished, three copies of the submittal shall be sent to the Pennsylvania Department of Environmental Protection, Bureau of Air Quality, Division of Source Testing and Monitoring, 400 Market Street, 12th Floor Rachael Carson State Office Building, Harrisburg, PA 17105-8468 with deadlines verified through document postmarks.
- h. The permittee shall ensure all federal reporting requirements contained in the applicable subpart of 40 CFR are followed, including timelines more stringent than those contained herein. In the event of an inconsistency or any conflicting requirements between state and the federal, the most stringent provision, term, condition, method or rule shall be used by

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

default.

**# 008 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4244]
Subpart JJJJ - Standards of Performance for Stationary Spark Ignition Internal Combustion Engines
What test methods and other procedures must I use if I am an owner or operator of a stationary SI internal combustion engine?**

Owners and operators of stationary SI ICE who conduct performance tests must follow the procedures in paragraphs (a) through (f) of this section.

- a. Each performance test must be conducted within 10 percent of 100 percent peak (or the highest achievable) load and according to the requirements in §60.8 and under the specific conditions that are specified by Table 2 to this subpart.
- b. You may not conduct performance tests during periods of startup, shutdown, or malfunction, as specified in §60.8(c). If your stationary SI internal combustion engine is non-operational, you do not need to startup the engine solely to conduct a performance test; however, you must conduct the performance test immediately upon startup of the engine.
- c. You must conduct three separate test runs for each performance test required in this section, as specified in §60.8(f). Each test run must be conducted within 10 percent of 100 percent peak (or the highest achievable) load and last at least 1 hour.
- d. To determine compliance with the NO_x mass per unit output emission limitation, convert the concentration of NO_x in the engine exhaust using Equation 1 of this section:

$$ER = (Cd \cdot 1.912 \cdot 10^{-3} \cdot Q \cdot T) / (HP\text{-hr}) \text{ (Eq. 1)}$$

Where:

ER = Emission rate of NO_x in g/HP-hr

Cd = Measured NO_x concentration in parts per million by volume (ppmv).

1.912×10^{-3} = Conversion constant for ppm NO_x to grams per standard cubic meter at 20 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meter per hour, dry basis.

T = Time of test run, in hours.

HP-hr = Brake work of the engine, horsepower-hour (HP-hr).

- e. To determine compliance with the CO mass per unit output emission limitation, convert the concentration of CO in the engine exhaust using Equation 2 of this section:

$$ER = (Cd \cdot 1.164 \cdot 10^{-3} \cdot Q \cdot T) / (HP\text{-hr}) \text{ (Eq. 2)}$$

Where:

ER = Emission rate of CO in g/HP-hr.

Cd = Measured CO concentration in ppmv.

1.164×10^{-3} = Conversion constant for ppm CO to grams per standard cubic meter at 20 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meters per hour, dry basis.

T = Time of test run, in hours.

HP-hr = Brake work of the engine, in HP-hr.

- f. For purposes of this subpart, when calculating emissions of VOC, emissions of formaldehyde should not be included. To

SECTION E. Source Group Plan Approval Restrictions.

determine compliance with the VOC mass per unit output emission limitation, convert the concentration of VOC in the engine exhaust using Equation 3 of this section:

$$ER = (Cd \cdot 1.833 \cdot 10^{-3} \cdot Q \cdot T) / (HP \cdot hr) \text{ (Eq. 3)}$$

Where:

ER = Emission rate of VOC in g/HP-hr.

Cd = VOC concentration measured as propane in ppmv.

1.833×10^{-3} = Conversion constant for ppm VOC measured as propane, to grams per standard cubic meter at 20 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meters per hour, dry basis.

T = Time of test run, in hours.

HP-hr = Brake work of the engine, in HP-hr.

g. If the owner/operator chooses to measure VOC emissions using either Method 18 of 40 CFR part 60, appendix A, or Method 320 of 40 CFR part 63, appendix A, then it has the option of correcting the measured VOC emissions to account for the potential differences in measured values between these methods and Method 25A. The results from Method 18 and Method 320 can be corrected for response factor differences using Equations 4 and 5 of this section. The corrected VOC concentration can then be placed on a propane basis using Equation 6 of this section.

$$RF_i = CM_i / CA_i \text{ (Eq. 4)}$$

Where:

RF_i = Response factor of compound i when measured with EPA Method 25A.

CM_i = Measured concentration of compound i in ppmv as carbon.

CA_i = True concentration of compound i in ppmv as carbon.

$$C_{icorr} = RF_i \cdot C_{imeas} \text{ (Eq. 5)}$$

Where:

C_{icorr} = Concentration of compound i corrected to the value that would have been measured by EPA Method 25A, ppmv as carbon.

C_{imeas} = Concentration of compound i measured by EPA Method 320, ppmv as carbon.

$$C_{peq} = 0.6098 \cdot C_{icorr} \text{ (Eq. 6)}$$

Where:

C_{peq} = Concentration of compound i in mg of propane equivalent per DSCM.

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).

**SECTION E. Source Group Plan Approval Restrictions.****IV. RECORDKEEPING REQUIREMENTS.**

**# 009 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4245]
Subpart JJJJ - Standards of Performance for Stationary Spark Ignition Internal Combustion Engines
What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary SI internal combustion engine?**

Owners or operators of stationary SI ICE must meet the following notification, reporting, and recordkeeping requirements:

- a. Owners and operators of all stationary SI ICE must keep records of the information in paragraphs (a)(1) through (4) of this section.
 - i. All notifications submitted to comply with this subpart and all documentation supporting any notification.
 - ii. Maintenance conducted on the engine.
 - iii. If the stationary SI internal combustion engine is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards and information as required in 40 CFR parts 90, 1048, 1054, and 1060, as applicable.
 - iv. If the stationary SI internal combustion engine is not a certified engine or is a certified engine operating in a non-certified manner and subject to §60.4243(a)(2), documentation that the engine meets the emission standards.
- b. N/A
- c. Owners and operators of stationary SI ICE greater than or equal to 500 HP that have not been certified by an engine manufacturer to meet the emission standards in §60.4231 must submit an initial notification as required in §60.7(a)(1). The notification must include the information in paragraphs (c)(1) through (5) of this section.
 - i. Name and address of the owner or operator;
 - ii. The address of the affected source;
 - iii. Engine information including make, model, engine family, serial number, model year, maximum engine power, and engine displacement;
 - iv. Emission control equipment; and
 - v. Fuel used.
- d. Owners and operators of stationary SI ICE that are subject to performance testing must submit a copy of each performance test as conducted in §60.4244 within 60 days after the test has been completed.

V. REPORTING REQUIREMENTS.

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

The Owner/Operator shall demonstrate initial compliance with the standards for each reciprocating compressor affected facility by complying with paragraphs a. through d. of this section. The initial compliance period begins upon initial startup and ends no later than one year after the initial startup date for the reciprocating compressor affected facilities. [Additional authority for this condition is derived from 40 CFR 60.5410, Subpart OOOO]

- a. During the initial compliance period, you must continuously monitor the number of hours of operation or track the number of months since the last rod packing replacement.
- b. You must submit the notifications required in 60.7(a)(1), (3), and (4).
- c. You must submit the initial annual report for your reciprocating compressor as required in § 60.5420(b).
- d. You must maintain the records as specified in § 60.5420(c)(3) for each reciprocating compressor affected facility.

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

The Owner/Operator shall demonstrate continuous compliance with the standards for each reciprocating compressor affected facility by complying with paragraphs a. through c. of this section. [Additional authority for this condition is derived from 40 CFR 60.5415, Subpart OOOO]

- a. You must continuously monitor the number of hours of operation for each reciprocating compressor affected facility or track the number of months since initial startup, or October 15, 2012, or the date of the most recent reciprocating compressor rod packing replacement, whichever is later.
- b. You must submit the annual report as required in § 60.5420(b) and maintain records as required in § 60.5420(c)(3).
- c. You must replace the reciprocating compressor rod packing before the total number of hours of operation reaches 26,000 hours or the number of months since the most recent rod packing replacement reaches 36 months.

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

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

The Owner/Operator shall meet the following notification, reporting, and recordkeeping requirements for each reciprocating compressor affected facility: [Additional authority for this condition is derived from 40 CFR 60.5420, Subpart OOOO]

a. You must submit the notifications required in § 60.7(a)(1) and (4), and according to paragraphs a.1) and 2) of this section, if you own or operate one or more of the affected facilities specified in § 60.5365 that was constructed, modified, or reconstructed during the reporting period.

1) If you own or operate a gas well, pneumatic controller or storage vessel affected facility you are not required to submit the notifications required in § 60.7(a)(1), (3), and (4).

2) N/A

b. Reporting requirements. You must submit annual reports containing the information specified in paragraphs b.1) through 6) of this section to the Administrator and performance test reports as specified in paragraph b.7) of this section. The initial annual report is due 30 days after the end of the initial compliance period as determined according to § 60.5410.

Subsequent annual reports are due on the same date each year as the initial annual report. If you own or operate more than one affected facility, you may submit one report for multiple affected facilities provided the report contains all of the information required as specified in paragraphs b.1) through 6) of this section. Annual reports may coincide with title V reports as long as all the required elements of the annual report are included. You may arrange with the Administrator a common schedule on which reports required by this part may be submitted as long as the schedule does not extend the reporting period.

1) The general information specified in paragraphs b.1)i. through iv. of this section.

i. The company name and address of the affected facility.

ii. An identification of each affected facility being included in the annual report.

iii. Beginning and ending dates of the reporting period.

iv. A certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

2) N/A

3) N/A

4) For each reciprocating compressor affected facility, the information specified in paragraphs b.4)i. through ii. of this section.

i. The cumulative number of hours of operation or the number of months since initial startup, October 15, 2012, or since the previous reciprocating compressor rod packing replacement, whichever is later.

ii. Records of deviations specified in paragraph c.3)iii. of this section that occurred during the reporting period.

5) N/A

6) N/A (this authorization)

7) N/A (this authorization)

c. Recordkeeping requirements. You must maintain the records identified as specified in § 60.7(f) and in paragraphs c.1) through 10) of this section. All records must be maintained for at least 5 years.

1) N/A

2) N/A

3) For each reciprocating compressors affected facility, you must maintain the records in paragraphs c.3)i. through iii. of this section.

i. Records of the cumulative number of hours of operation or number of months since initial startup or October 15, 2012, or the previous replacement of the reciprocating compressor rod packing, whichever is later.

ii. Records of the date and time of each reciprocating compressor rod packing replacement.

iii. Records of deviations in cases where the reciprocating compressor was not operated in compliance with the requirements specified in § 60.5385.

4) N/A

5) N/A (this authorization)

6) N/A (this authorization)

7) N/A (this authorization)

8) N/A

9) N/A

10) N/A

**SECTION E. Source Group Plan Approval Restrictions.****VI. WORK PRACTICE REQUIREMENTS.****# 013 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

The Owner/Operator shall comply with the standards in paragraphs a. through d. of this section for each reciprocating compressor affected facility. [Additional authority for this condition is derived from 40 CFR 60.5385, Subpart OOOO]

a. You must replace the reciprocating compressor rod packing according to either paragraph a.1) or 2) of this section.

1) Before the compressor has operated for 26,000 hours. The number of hours of operation must be continuously monitored beginning upon initial startup of your reciprocating compressor affected facility, or October 15, 2012, or the date of the most recent reciprocating compressor rod packing replacement, whichever is later.

2) Prior to 36 months from the date of the most recent rod packing replacement, or 36 months from the date of startup for a new reciprocating compressor for which the rod packing has not yet been replaced.

b. You must demonstrate initial compliance with standards that apply to reciprocating compressor affected facilities as required by § 60.5410.

c. You must demonstrate continuous compliance with standards that apply to reciprocating compressor affected facilities as required by § 60.5415.

d. You must perform the required notification, recordkeeping, and reporting as required by § 60.5420.

014 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4243]**Subpart JJJJ - Standards of Performance for Stationary Spark Ignition Internal Combustion Engines****What are my compliance requirements if I am an owner or operator of a stationary SI internal combustion engine?**

Compliance requirements as an Owner/Operator of a stationary SI internal combustion engine.

a. N/A

b. As an Owner/Operator of stationary SI ICE subject to the emission standards specified in §60.4233(e), you must demonstrate compliance according to one of the methods specified in paragraphs (b)(1) and (b)(2) of this condition [40 CFR §60.4243].

1) N/A

2) Purchasing a non-certified engine and demonstrating compliance with the emission standards specified in §60.4233(d) or (e) and according to the requirements specified in §60.4244, as applicable, and according to paragraphs (b)(2)(i) and (ii) of this section.

i. N/A

ii. If you are an owner or operator of a stationary SI internal combustion engine greater than 500 HP, you must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test and conduct subsequent performance testing every 8,760 hours or 3 years, whichever comes first, thereafter to demonstrate compliance.

c. N/A

d. N/A

e. N/A

f. N/A

g. It is expected that air-to-fuel ratio controllers will be used with the operation of three-way catalysts/non-selective catalytic reduction. The AFR controller must be maintained and operated appropriately in order to ensure proper operation of the engine and control device to minimize emissions at all times.

h. N/A

i. N/A

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

General provisions. Table 3 to 40 CFR Part 60 Subpart OOOO shows which parts of the General Provisions in §§ 60.1 through 60.19 apply to you. [Additional authority for this condition is derived from 40 CFR 60.5425, Subpart OOOO]

**SECTION E. Source Group Plan Approval Restrictions.****# 016 [25 Pa. Code §127.12b]****Plan approval terms and conditions.**

All terms used in 40 CFR Part 60 Subpart OOOO shall have the meaning given in 40 CFR §60.5430 or else in the Clean Air Act and 40 CFR Part 60 Subparts A or VVa. [Additional authority for this condition is derived from 40 CFR 60.5430, Subpart OOOO]

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

Each reciprocating compressor driven by a Waukesha P9390GSI compressor engine, approved to be installed under this plan approval, is subject to 40 CFR Part 60, Subpart OOOO – Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution. [Additional authority for this condition is derived from 40 CFR 60.5365, Subpart OOOO]

018 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4230]**Subpart JJJJ - Standards of Performance for Stationary Spark Ignition Internal Combustion Engines****Am I subject to this subpart?**

Each Waukesha P9390GSI compressor engine, approved to be installed under this plan approval, is subject to the requirements under 40 CFR Part 60, Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines.

019 [40 CFR Part 60 Standards of Performance for New Stationary Sources §40 CFR 60.4248]**Subpart JJJJ - Standards of Performance for Stationary Spark Ignition Internal Combustion Engines****What definitions apply to this subpart?**

All terms used in 40 CFR Part 60 Subpart JJJJ shall have the meaning given in 40 CFR §60.4248 or else in the Clean Air Act and 40 CFR Part 60 Subpart A.

020 [40 CFR Part 63 NESHAPS for Source Categories §40 CFR 63.6585]**Subpart ZZZZ - National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines****Am I subject to this subpart?**

Each Waukesha P9390GSI compressor engine, approved to be installed under this plan approval, is subject to 40 CFR Part 63, Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.

021 [40 CFR Part 63 NESHAPS for Source Categories §40 CFR 63.6590]**Subpart ZZZZ - National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines****What parts of my plant does this subpart cover?**

Each Waukesha P9390GSI compressor engine, approved to be installed under this plan approval, is a new stationary RICE located at an area source. Each of these compressor engines must meet the requirements of 40 CFR Part 63 Subpart ZZZZ by meeting the requirements of 40 CFR Part 60 Subpart JJJJ. No further requirements apply for these engines under 40 CFR Part 63 Subpart ZZZZ.



SECTION F. Alternative Operation Requirements.

No Alternative Operations exist for this Plan Approval facility.



SECTION G. Emission Restriction Summary.

No emission restrictions listed in this section of the permit.

**SECTION H. Miscellaneous.**

This is a natural minor facility and as such actual emissions can not equal or exceed the following in any consecutive 12-month period:

- 100.0 tons of CO (CARBON MONOXIDE)
- 100.0 tons of NO_x (NITROGEN OXIDES)
- 100.0 tons of SO_x (SULFUR OXIDES)
- 100.0 tons of PM-10 (PARTICULATE MATTER < 10 MICRONS)
- 50.0 tons of VOC (VOLATILE ORGANIC COMPOUNDS)
- 10.0 tons of a SINGLE HAP (HAZARDOUS AIR POLLUTANT)
- 25.0 tons of ALL HAP COMBINED

Sources authorized for construction and operation at this facility under GP5-63-00968 and GP9-63-00968 include the following:

- Two (2) Waukesha, Model No. L7042GSI, rich burn natural gas-fired engines, 1,480 bhp @ 1,200 rpm; controlled by Johnson Matthey, Model No. QXH-80-T-CS-EI-12 (or equivalent), NSCR units; regulated by integrated ESM (or equivalent), automatic air/fuel ratio controllers.
- One (1) tri ethylene glycol dehydrator, 40 MMSCF/day, with a 2.0 MMBtu/hr reboiler and equipped with flash tank, flash gas recycle/recompression; controlled by a SFI 48" enclosed flare (or equivalent), rated at 2.1 MMBtu/hr, (98% control efficiency).
- One (1) gunbarrel separator tank, 500 bbl capacity, controlled by a Hy-Bon (or equivalent) vapor recovery unit.
- Four (4) condensate tanks, 400 bbl capacity, controlled by a Hy-Bon (or equivalent) vapor recovery unit.
- Two (2) John Deere, Model No. 6068HF285, diesel-fired generators, 197 bhp @ 1,800 rpm; controlled by Miratech, Model No. IQ-12-05-L1, oxidation catalysts.



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