



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8**

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<http://www2.epa.gov/aboutepa/epa-region-8-mountains-and-plains>

Ref: 8P-AR

Mr. Dan Jefferson
EHS Manager
Red Cedar Gathering Company
125 Mercado Street, Suite 201
Durango, Colorado 81301

JUN - 5 2014

Re: Red Cedar Gathering Company, Arkansas Loop and Simpson Treating Plants
Permit # SMNSR-SU-000010-2011.001, Synthetic Minor New Source Review Permit

Dear Mr. Jefferson:

The Environmental Protection Agency, Region 8 has completed its review of Red Cedar Gathering Company's (Red Cedar's) request to obtain a synthetic minor permit to construct pursuant to the Tribal Minor New Source Review Permit Program at 40 CFR Part 49 (MNSR) for the Arkansas Loop and Simpson Treating Plants. Based on the information submitted in Red Cedar's application the EPA hereby issues the enclosed final MNSR permit to construct for the Arkansas Loop and Simpson Treating Plants. Please review each condition carefully and note any restrictions placed on this source.

A 30-day public comment period was held from November 21, 2013 to December 23, 2013. The EPA received comments from Red Cedar on December 10, 2013. No other comments were received during the public comment period. The EPA's response to the public comments is also enclosed. The EPA made several revisions to the permit based on Red Cedar's comments, as well as EPA-identified changes necessary for clarification and consistency with other EPA-issued permits. The final permit will be effective on July 5, 2014.

Pursuant to 40 CFR 49.159, within 30 days after the final permit decision has been issued, any person who commented on the specific terms and conditions of the draft permit, may petition the Environmental Appeals Board to review any term or condition of the permit. Any person who failed to comment on the specific terms and conditions of this permit may petition for administrative review only to the extent that the changes from the draft to the final permit or other new grounds were not reasonably ascertainable during the public comment period. The 30-day period within which a person may request review begins with this notice of the final permit decision. If an administrative review of the final permit is requested, the specific terms and conditions of the permit that are the subject of the request for review must be stayed.

If you have any questions concerning the enclosed final permit please contact Claudia Smith of my staff at (303) 312-6520.

Sincerely,



Debra H. Thomas
Acting Assistant Regional Administrator
Office of Partnerships and Regulatory Assistance

Enclosures

cc: Brenda Jarrell, Air Quality Program Director, Southern Ute Indian Tribe Environmental Program

Enclosure -Response to Comments and Changes to Proposed MNSR Permit to Construct

Comments from Red Cedar Gathering Company (Red Cedar) on Proposed Permit to Construct for the Arkansas Loop and Simpson Treating Plants pursuant to the Tribal Minor New Source Review Permit Program at 40 CFR Part 49 (MNSR)

1. **“Comment #1: Pg. 5, conditions I.G.2.(a) and 3.(a)**

Red Cedar does not believe that the g/hp-hr emission limits for VOC or CH₂O are accurate representations of the emissions from these units due to the fact that the units are not capable of operating at full load, and is requesting that these limits be removed. Due to the electrical load requirements of the Simpson Treating Plant and the capacity of the 1,622 hp 4SLB natural gas-fired generators, these units are typically operated at 60-70% load and currently cannot achieve loads greater than 80-85%. Removal of the g/hp-hr will not affect the synthetic minor permit limits, as the lb/hr and tpy limits will remain. In addition the units must meet a VOC emission limit of 0.7 g/hp-hr under 40 CFR part 60 subpart JJJJ.”

On September 5, 2013, prior to the public comment period, we received an amendment to the application from Red Cedar requesting the removal of the g/hp-hr emission limits. We had planned to remove the g/hp-hr engine emission limits from the proposed permit as requested; however, upon further research into the matter, we determined that an earlier version of the proposed permit, with the g/hp-hr emission limits, was made available for public comment. The g/hp-hr emission limits have been removed from conditions I.F.2.(a) and 3.(a) of the final permit.

2. **“Comment #2: Pg. 6, condition I.H.1. and I.I.4.(b).**

The reference in these permit conditions to 90.0% to 100.0% of engine capacity at site elevation should be removed. As mentioned in Comment #1, these units are not capable of achieving a load of 90.0% to 100.0% of the engine capacity at the site location. Red Cedar recommends using a ‘maximum achievable operating rate’ for both locations. In April 2011 Red Cedar requested, and received approval from EPA for an alternative test method to test these units at less than 90% load.”

Given the EPA’s April 2011 approval to alternatively test the engines at less than 90% load, we are making the requested change. The condition at I.F.1. of the final permit has been changed to read, “Each 1,622 hp 4SLB natural gas-fired generator RICE shall each be equipped with oxidation catalyst control systems capable of reducing uncontrolled VOC and CH₂O emissions to meet the emission limits specified in this permit.” The condition at I.G.4.(b) of the final permit, has been changed to read, “All tests shall be performed at a maximum operating rate (90% to 110% of the maximum achievable load available on the day of the test). The Permittee may submit to the EPA a written request

for approval of testing at an alternate load level, but shall only test at that level after obtaining approval from the EPA.”

3. **“Comment #3: Pg. 11, condition I.K.4.(a)**

In relation to Comment #1, Red Cedar recommends removing reference to the g/hp-hr VOC and CH₂O emission limits. Additionally, the language of this requirement as written is confusing. Multiplying the g/hp-hr emission factor by the number of run hours for the month would, as written, would result in a g/hp emission rate. The intent of this requirement is to get a monthly emission total, which is best done using the tested lb/hr emission rate and actual run hours.”

We agree that this change is warranted for the reasons Red Cedar stated. The reference to the g/hp-hr emission limits has been removed from condition I.I.4.(a) of the final permit. This action also clarifies the language of the requirement in the proposed permit.

4. **“Additional permit information**

Please include the additional information included with this submittal for compression that is planned to be added to the Arkansas Loop Treating Plant in early 2014, into the Minor NSR permit. This project is a result of Red Cedar moving compression from other locations to optimize our system, is a separate project from the Simpson Treating Plant, and is a minor modification under PSD. The compression move is due to a contractual change that will take effect at the end of 2013. This project includes the removal of unit E-101 and the installation of two Caterpillar G3606 engines and associated compressors (both units previously located at Red Cedar’s Outlaw compressor station). A project PTE emissions calculation has been included for a PSD major modification determination. This calculation does not take into account the removal of unit E-101 because the project PTE is less than the major modification thresholds without the removal of unit E-101.”

According to the information Red Cedar provided in the submittal, the proposed facility modification is a minor modification with regard to preconstruction permitting. However, according to 40 CFR 49.151(c)(1)(i)(A), if a source wishes to commence construction of a minor modification at an existing major source on or after August 30, 2011, it must obtain a permit pursuant to §§ 49.154 and 49.155 prior to commencing construction. Therefore, Red Cedar must obtain a permit prior to commencing construction of the additional compression project at the Arkansas Loop Treating Plant and it will need to be processed as a separate permit action from this one in order to comply with the requirements of §§ 49.154 and 49.155, and by extension the public participation requirements of §49.157. We recommend that Red Cedar review the application forms and instructions found online at <http://www2.epa.gov/region8/tribal-minor-new-source-review-permitting> to verify that the information provided in the December 10, 2013 comments submittal contains all the information required to process the separate MNSR permit action.

United States Environmental Protection Agency
Region 8, Air Program
1595 Wynkoop Street
Denver, CO 80202



**Air Pollution Control
Synthetic Minor Source Permit to Construct**

40 CFR 49.151

SMNSR-SU-000010-2011.001

*Permit to Construct to establish legally and practically enforceable
limitations and requirements on sources at an existing facility.*

Permittee:

Red Cedar Gathering Company

Permitted Facility:

Arkansas Loop and Simpson Natural Gas Treating Plants
Southern Ute Indian Reservation
La Plata County, Colorado

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Summary

On December 30, 2011, the EPA received an application from Red Cedar Gathering Company (Red Cedar) requesting a synthetic minor permit for the Arkansas Loop and Simpson Treating Plants in accordance with the requirements of the Tribal Minor New Source Review Permit Program at 40 CFR Part 49 (MNSR).

The Arkansas Loop and Simpson Treating Plants are located within the exterior boundaries of the Southern Ute Indian reservation in Colorado. The plants provide natural gas field compression, CO₂ removal, and dehydration to remove entrained water vapor from the gas stream. The natural gas comes from upstream coal-bed methane production wells and compressor stations connected to a gathering pipeline system to the inlet of the facilities.

This permit does not authorize the construction of any new emission sources, nor does it otherwise authorize any other physical modifications to the facility or its operations. This permit is intended only to incorporate required and requested emission limits and provisions from the following documents:

- A. An operating permit the EPA issued to Red Cedar for the Arkansas Loop and Simpson Treating Plants in accordance with the Title V Operating Permit Program at 40 CFR Part 71 (Part 71), effective October 8, 2010.
- B. A December 30, 2011, application from Red Cedar requesting a synthetic minor permit for the Arkansas Loop and Simpson Treating Plants, and a September 5, 2013 amendment to the application.

The transfer of the requirements from the Part 71 permit, in addition to the incorporation of limits requested by Red Cedar in its permit application, consolidates the requirements originating from these documents into one permit.

The EPA determined that this approval will not contribute to NAAQS violations, or have potentially adverse effects on ambient air.

I. Conditional Permit to Construct

A. General Information

Facility: Arkansas Loop and Simpson Treating Plants
Permit number: SMNSR-SU-000010-2011.001
SIC Code and SIC Description: 1311 – Crude Petroleum and Natural Gas

Site Location:
Arkansas Loop & Simpson Treating Plants
NW ¼ Sec 1 T32N R9W
Southern Ute Indian Reservation
La Plata County, Colorado

Corporate Office Location:
Red Cedar Gathering Company
125 Mercado Street, Suite 201
Durango, CO 81301

The equipment listed in this permit may only be operated by Red Cedar Gathering Company (Red Cedar) at the following location:

Latitude 37.052783N, Longitude -107.784875W

B. Applicability

1. This permit is being issued under authority of the MNSR permit program.
2. The requirements in this permit have been created, at the Permittee's request, to avoid the requirements of the Prevention of Significant Deterioration Permit Program at 40 CFR Part 52 (PSD) for construction of the Simpson Treating Plant (an otherwise PSD significant modification to the Arkansas Loop Treating Plant).
3. Any conditions established for this facility or any specific units at this facility pursuant to any permit issued under PSD or the MNSR permit program shall continue to apply.
4. By issuing this permit, the EPA does not assume any risk of loss which may occur as a result of the operation of the permitted facility by the Permittee, Owner, and/or Operator, if the conditions of this permit are not met by the Permittee, Owner, and/or Operator.

C. Equipment Removal from Arkansas Loop Treating Plant

1. The Permittee shall shut down, permanently remove from service, and physically remove from the Arkansas Loop Treating Plant, an existing 1,283 site-rated horse-power (hp), 4-stroke lean-burn (4SLB) natural gas-fired reciprocating internal combustion engine used for compression and an existing 37 million standard cubic feet per day (MMscfd) TEG dehydration system with its associated 0.6 million British thermal units per hour (MMBtu/hr) natural gas-fired reboiler prior to starting up any emission units at the Simpson Treating Plant.
2. The Permittee shall submit to the EPA documentation sufficient to verify that the engine and dehydration system have been physically removed from the Arkansas Loop Treating Plant prior to starting up any of the emission units at the Simpson Treating Plant. This documentation shall be submitted within 30 days of the physical removal of the engine and dehydrator.

Note: The EPA received notification from Red Cedar that the Arkansas Loop Treating Plant equipment removal was completed on February 16, 2011, and that the new equipment at the Simpson Treating Plant commenced operation on March 22, 2011.

D. Construction Requirements

1. The Permittee may install, maintain and operate the following equipment at the Simpson Treating Plant:

Table 1 – Approved Emission Unit Construction

Two (2) - 1,622 maximum site rated hp, 4SLB operated, natural gas-fired reciprocating internal combustion engines used for electric generation
One (1) - 80 MMBtu/hr, natural gas-fired custom made heat medium heater
One (1) - 100 MMscfd custom made amine plant
Two (2) - 70 MMscfd TEG Dehydration Systems each with 1.2 MMBtu/hr, natural gas-fired TEG reboiler
One (1) - 6,615 gallon inlet coalescing filter dump tank (production water)*
One (1) - 125 gallon heat medium makeup storage tank *
One (1) - 6,615 gallon heat medium pressure safety valve (PSV) blowdown tank *
One (1) - 30 gallon oil tote tank (anti-foam) *
One (1) - 1,575 gallon TEG makeup storage tank*
One (1) - 1,316 gallon still vent tank*
One (1) each 542 gallon coolant tank, coolant maintenance tank, used engine oil tank, engine oil tank*
One (1) each 55 gallon coolant overflow barrel and oil overflow barrel*
One (1) - 1,575 gallon TEG recovery tank*
One (1) - 2,835 gallon process and oily water drain tank*
One (1) - 2,835 gallon oily water sump tank*

*Insignificant emission unit, as defined in 40 CFR 71.2

2. Only the engines that are operated and controlled as specified in this permit are approved for installation under this permit.

E. Emission Limits

1. Total cumulative volatile organic compound (VOC) emissions from the approved emission units for the Simpson Treating Plant, specified in Table 1 above, shall not exceed 41.6 tons during any consecutive 12 months.
2. VOC emissions (to include formaldehyde (CH₂O) and acetaldehyde) from each 1,622 hp 4SLB natural gas-fired engine shall not exceed the following:
 - (a) 2.1 pounds per hour (lbs/hr); and

- (b) 9.4 tons per year (tpy).
- 3. CH₂O emissions from each 1,622 hp 4SLB natural gas-fired engine shall not exceed the following:
 - (a) 1.4 lbs/hr; and
 - (b) 6.3 tpy.
- 4. Emission limits shall apply at all times, unless otherwise specified in this permit.

F. Control and Operational Requirements

- 1. The Permittee shall ensure that each engine is equipped with an oxidation catalyst control system capable of reducing uncontrolled VOC and CH₂O emissions to meet the emission limits specified in this permit.
- 2. The Permittee shall install, operate and maintain temperature-sensing devices (i.e. thermocouple or resistance temperature detectors) before the catalytic control system on each engine to continuously monitor the exhaust temperature at the inlet of the catalyst bed. Each temperature-sensing device shall be calibrated and operated according to manufacturer specifications or equivalent specifications developed by the Permittee or vendor.
- 3. Except during startups, which shall not exceed 30 minutes, the engine exhaust temperature of each engine, at the inlet to the catalyst bed shall be maintained at all times the engines operate with an inlet temperature of at least 550 °F and no more than 1,250 °F.
- 4. During operation the pressure drop across the catalyst bed on each 1,622 hp engine shall be maintained to within ± 2 inches of water from the baseline pressure drop reading taken during the most recent performance test. The baseline pressure drop for the catalyst bed shall be determined at $100\% \pm 10\%$ of the engine load measured during the most recent performance test.
- 5. The Permittee shall only fire each 1,622 hp 4SLB engine with natural gas. The natural gas shall be pipeline-quality in all respects except that the carbon dioxide (CO₂) concentration in the gas is not required to be within pipeline-quality.
- 6. The Permittee shall follow, for each 1,622 hp 4SLB engine and its respective catalytic control system, the manufacturer recommended maintenance schedule and procedures, or equivalent maintenance schedule and procedures developed by the Permittee or vendor, to ensure optimum performance of each engine and its respective catalytic control system.
- 7. The Permittee may rebuild an existing permitted engine or replace an existing permitted engine with an engine of the same hp rating, and configured to operate in the same manner as the engine being rebuilt or replaced. Any emission limits, requirements, control technologies, testing or other provisions that apply to the permitted engines that are replaced shall also apply to the rebuilt and replaced engines.
- 8. The Permittee may resume operation without the catalytic control system during an engine break-in period, not to exceed 200 operating hours, for rebuilt and replaced engines.

G. Performance Testing Requirements

1. Performance tests shall be conducted on each 1,622 hp 4SLB natural gas-fired engine for measuring VOC, and CH₂O emissions to demonstrate compliance with the emission limits in this permit and establish a baseline percentage of the carbon monoxide (CO) emissions reduction that correlates with the compliance of the VOC and CH₂O emission limits. The performance tests shall be conducted in accordance with appropriate reference methods specified in 40 CFR Part 60, Appendix A, 40 CFR Part 63, Appendix A, or an EPA-approved American Society for Testing and Materials (ASTM) method. The Permittee may submit to the EPA a written request for approval of an alternate test method, but shall only use that alternate test method after obtaining approval from the EPA.
 - (a) The initial performance test shall be conducted within 90 calendar days of startup of a new engine.
 - (b) Subsequent performance tests shall be conducted within 12 months of the most recent performance test.
 - (c) Performance tests shall be conducted within 90 calendar days of the replacement of a catalyst on an engine.
 - (d) Performance tests shall be conducted within 90 calendar days of startup of all rebuilt engines and replaced engines.
2. The Permittee shall not perform engine tuning or make any adjustments to engine settings, catalytic control system settings, processes, or operational parameters the day of or during the engine testing. Any such tuning or adjustments may result in a determination by the EPA that the test is invalid. Artificially increasing an engine load to meet testing requirements is not considered engine tuning or adjustments.
3. The Permittee shall not abort any engine tests that demonstrate non-compliance with the VOC or CH₂O emission limits in this permit.
4. Performance tests conducted on each 1,622 hp 4SLB engine shall meet the following requirements:
 - (a) Portable analyzer testing shall be conducted at least once during each performance test to establish a new baseline percentage reduction of CO emissions that correlates with compliance of the VOC and CH₂O emission limits.
 - (b) The pressure drop across each catalyst bed and the inlet temperature to each catalyst bed shall both be measured and recorded at least once during each performance test to establish a new baseline pressure drop and to demonstrate compliance with the operating temperature limitation of this permit.
 - (c) All performance tests shall be conducted at a maximum operating rate (90% to 110% of the maximum achievable engine load available at the time of the test). The Permittee may submit to the EPA a written request for approval of an alternate load level for testing, but shall only test at that alternative level after obtaining written approval from the EPA.

- (d) During each test run, data shall be collected on all parameters necessary to document how VOC and CH₂O emissions, and percent reduction of CO emissions were measured and calculated (such as test run length, minimum sample volume, volumetric flow rate, moisture and oxygen corrections, etc.).
- (e) Each test shall consist of at least three 1-hour or longer valid test runs. Emission results shall be reported as the arithmetic average of all valid test runs and shall be in terms of the emission limits (lbs/hr) for VOC and CH₂O, and percentage reduction of CO.
- (f) Performance test plans shall be submitted to the EPA for approval 60 calendar days prior to the date the test is planned.
- (g) Performance test plans that have already been approved by the EPA for the emission units approved in this permit may be used in lieu of new test plans unless the EPA requires the submittal and approval of new test plans. The Permittee may submit new plans for EPA approval at any time.
- (h) The test plans shall include and address the following elements:
 - (i) Purpose of the test;
 - (ii) Engines and catalytic control systems to be tested;
 - (iii) Expected engine operating rate(s) during the test;
 - (iv) Sampling and analysis procedures (sampling locations, test methods, laboratory identification);
 - (v) Quality assurance plan (calibration procedures and frequency, sample recovery and field documentation, chain of custody procedures); and
 - (vi) Data processing and reporting (description of data handling and quality control procedures, report content).
- (i) The Permittee shall notify the EPA at least 30 calendar days prior to scheduled performance testing. The Permittee shall notify the EPA at least 1 week prior to scheduled performance testing if the testing cannot be performed.
- (j) If a permitted engine is not operating, the Permittee does not need to start up the engine solely to conduct a performance test. The Permittee may conduct the performance test when the engine is started up again.

H. Monitoring Requirements

1. The Permittee shall concurrently measure the flow rate of the acid gas entering the amine plant contactor at the Simpson Treating Plant in MMscf/hr using a flow meter and obtain a laboratory analysis of the CO₂ content of the acid gas entering the amine plant contactor, quarterly at a minimum.
2. The Permittee shall continuously monitor the exhaust temperature of each engine at the inlet to each catalyst bed on each 1,622 hp 4SLB engine.
3. Except during startups, which shall not exceed 30 minutes, if the engine exhaust temperature at the inlet to the catalyst bed on either 1,622 hp 4SLB natural gas-fired engine deviates from the

acceptable ranges specified in this permit, then the following actions shall be taken. The Permittee's completion of any or all of these actions shall not constitute, nor qualify as, an exemption from any other emission limits in this permit.

- (a) Within 24 hours of determining a deviation of the engine exhaust temperature at the inlet to the catalyst bed, the Permittee shall investigate. The investigation shall include testing the temperature sensing device, inspecting the engine for performance problems and assessing the catalytic control system for possible damage that could affect catalytic system effectiveness (including, but not limited to, catalyst housing damage, and fouled, destroyed or poisoned catalyst).
 - (b) If the engine exhaust temperature at the inlet to the catalyst bed can be corrected by following the engine manufacturer recommended procedures or equivalent procedures developed by the Permittee or vendor, and the catalytic control system has not been damaged, then the Permittee shall correct the engine exhaust temperature at the inlet to the catalyst bed within 24 hours of inspecting the engine and catalytic control system.
 - (c) If the engine exhaust temperature at the inlet to the catalyst bed cannot be corrected using the engine manufacturer recommended procedures or equivalent procedures developed by the Permittee or vendor, or the catalytic control system has been damaged, then the affected engine shall cease operating immediately and shall not be returned to routine service until the following has been met:
 - (i) The engine exhaust temperature at the inlet to the catalyst bed is measured and found to be within the acceptable temperature range for that engine; and
 - (ii) The catalytic control system has been repaired or replaced, if necessary.
4. The Permittee shall monitor the pressure drop across the catalyst bed on each 1,622 hp 4SLB engine every 30 days, using pressure sensing devices before and after the catalyst bed to obtain a direct reading of the pressure drop (also referred to as the differential pressure). *[Note to Permittee: Differential pressure measurements, in general, are used to show the pressure across the filter elements. This information will determine when the elements of the catalyst bed are fouling, blocked or blown out and thus require cleaning or replacement.]*
 5. The Permittee shall perform the first measurement of the pressure drop across the catalyst bed on each engine no more than 30 days from the date of the initial performance test. Thereafter, the Permittee shall measure the pressure drop across the catalyst bed, at a minimum, every 30 days. Subsequent performance tests, as required in this permit, can be used to meet the periodic pressure drop monitoring requirements provided it occurs within the 30-day window. The pressure drop reading can be a one-time measurement on that day, the average of performance test runs conducted on that day, or an average of all the measurements taken on that day if continuous readings are taken.
 6. If the pressure drop reading exceeds ± 2 inches of water from the baseline pressure drop established during the most recent performance test, then the following actions shall be taken. The Permittee's completion of any or all of these actions shall not constitute, nor qualify as, an exemption from any other emission limits in this permit.
 - (a) Within 24 hours of determining a deviation of the pressure drop across the catalyst bed, the Permittee shall investigate. The investigation shall include testing the pressure

transducers and assessing the catalytic control system for possible damage that could affect catalytic system effectiveness (including, but not limited to, catalyst housing damage, and plugged, fouled, destroyed, or poisoned catalyst).

- (b) If the pressure drop across the catalyst bed can be corrected by following the catalytic control system manufacturer recommended procedures or equivalent procedures developed by the Permittee or vendor, and the catalytic control system has not been damaged, then the Permittee shall correct the problem within 24 hours of inspecting the catalytic control system.
- (c) If the pressure drop across the catalyst bed cannot be corrected using the catalytic control system manufacturer recommended procedures or equivalent procedures developed by the Permittee or vendor, or the catalytic control system is damaged, then the Permittee shall do one of the following:
 - (i) Conduct a performance test within 90 calendar days, as specified in this permit to ensure that the VOC and CH₂O emission limits are being met, and to re-establish the baseline pressure drop across the catalyst bed. The Permittee shall measure CO emissions and determine the percent reduction using a portable analyzer and a monitoring protocol approved by the EPA to establish a new temporary pressure drop baseline until a performance test can be scheduled and completed; or
 - (ii) Cease operating the affected engine immediately. The engine shall not be returned to routine service until the pressure drop is measured and found to be within the acceptable pressure range for that engine, as determined from the most recent performance test. Corrective action may include removal and cleaning of the catalyst or replacement of the catalyst.

7. The Permittee shall monitor VOC and CH₂O emissions from the exhaust of the catalytic control system on each 1,622 hp 4SLB engine at least quarterly to demonstrate compliance with the emission limits in this permit. To meet this requirement, the Permittee shall:

- (a) Commence monitoring within 90 days of the Permittee's submittal of initial performance test results for VOC and CH₂O emissions, and the percentage reduction of CO emissions to the EPA; and
- (b) Measure CO emissions and the percentage reduction at the normal operating load using a portable analyzer and a monitoring protocol approved by the EPA as a surrogate to confirming compliance with the VOC and CH₂O emission limits using the baseline correlation established during the most recent performance test or conduct a performance test for VOC and CH₂O emissions as specified in this permit.

[Note to Permittee: The purpose for the option to measure CO emissions and percent reduction using a portable analyzer is to demonstrate VOC and CH₂O emissions reductions on a quarterly basis using CO as a surrogate, as there are currently no EPA-approved protocols for monitoring VOC or CH₂O emissions using a portable analyzer. If the catalyst is operating such that CO is effectively being reduced by at least as much as was measured during the most recent performance test where a correlation between compliance with the VOC and CH₂O emission limits was established, it can be verified that VOC and CH₂O limits are being achieved.]

8. The Permittee shall not perform engine tuning or make any adjustments to engine settings, catalytic control system settings, or processes or operational parameters on the day of or during measurements. Any such tuning or adjustments may result in a determination by the EPA that the result is invalid. Artificially increasing an engine load to meet the testing requirements is not considered engine tuning or adjustments.
9. For any one (1) engine: If the results of 2 consecutive quarterly portable analyzer measurements for percentage reduction of CO, or VOC and CH₂O performance tests, demonstrate compliance with the VOC and CH₂O emission limits, the required monitoring frequency for VOCs and CH₂O may change from quarterly to semi-annually.
10. For any one (1) engine: If the results of any subsequent annual portable analyzer measurements for percentage reduction of CO, or VOC and CH₂O performance tests, demonstrate non-compliance with the VOC or CH₂O emission limits, the required monitoring frequency for VOCs and CH₂O shall change from semi-annually to quarterly.
11. The Permittee shall submit portable analyzer specifications and monitoring protocols for to the EPA at the following address for approval at least 45 calendar days prior to the date of initial portable analyzer monitoring:

 U.S. U.S. Environmental Protection Agency, Region 8
 Office of Enforcement, Compliance & Environmental Justice
 Air Toxics and Technical Enforcement Program, 8ENF-AT
 1595 Wynkoop Street
 Denver, Colorado 80202
12. Portable analyzer protocols that have already been approved by the EPA for the emission units approved in this permit may be used in lieu of new protocols unless the EPA requires the submittal and approval of a new protocol. The Permittee may submit a new protocol for EPA approval at any time.
13. The Permittee is not required to conduct emissions monitoring of VOC and CH₂O emissions and parametric monitoring of exhaust temperature and catalyst differential pressure on engines that have not operated during the monitoring period. The Permittee shall certify that the engine(s) did not operate during the monitoring period in the annual report specified in this permit.

I. Emissions Calculations

1. Monthly emissions calculations shall be based on the actual average daily emissions for the Simpson Treating Plant for each month.
2. VOC emissions from all controlled and uncontrolled emitting units, as specified in Table 1 of this permit, shall be included in the VOC emission calculations, including, but not limited to: the engines, heaters, amine plant TEG dehydrators and reboilers, and liquid storage tanks.
3. VOC emissions from the 4SLB natural gas-fired engines shall also include acetaldehyde and CH₂O emissions.
4. At the end of the first full calendar month following the initial performance tests for the 1,622 hp 4SLB engines, the Permittee shall calculate the actual VOC emissions, in tons per year (tpy) for

the entire Simpson Treating Plant, and the actual VOC and actual CH₂O emissions in tpy from each 4SLB natural gas-fired engine for that month.

5. Prior to twelve full months of emission calculations, the Permittee shall, at the end of each calendar month, add the emissions for that month to the calculated emissions for all previous months since the initial tests for the 1,622 hp 4SLB engines and record the total. Thereafter, the Permittee shall, at the end of each month, add the emissions for that month to the calculated emissions for the preceding eleven months and record a new twelve-month total.
6. The total VOC emissions for the Simpson Treating Plant, and the VOC and CH₂O emissions for each 1,622 hp 4SLB engine shall be calculated as follows:
 - (a) For each 1,622 hp 4SLB engine:
 - (i) CH₂O emissions shall be calculated by multiplying the most recent performance test results for CH₂O for each engine, in lb/hr by the number of operating hours for the engine for that month and converting to tpy.
 - (ii) Acetaldehyde emissions shall be calculated using the AP-42 emission factor and accompanying conversion formulas provided in AP 42, Fifth Edition, Volume I Chapter 3: Stationary Internal Combustion Sources, Section 3.2: Natural Gas-fired Reciprocating Combustion Engines, and the number of operating hours for the engine for that month and converting to tpy.
 - (iii) VOC emissions for the month shall be calculated by multiplying the most recent performance test results for VOC in lbs/hr, by the number of operating hours the engine for that month, adding the calculated CH₂O and acetaldehyde emissions, and converting to tpy.
 - (iv) Monthly emissions calculations shall account for any engine break-in period where the engine was operated without the catalytic control system installed. VOC and CH₂O emissions during break-in periods shall be calculated by multiplying the manufacturer-specified VOC and CH₂O emission factors in lb/hr for an uncontrolled engine by the hours the engine operated without the catalytic control system installed for that month, and converting to tpy.
 - (b) For the remaining emission units at the Simpson Treating Plant, specified in Table 1 of this permit, except for the units identified as insignificant emission units (IEUs), total VOC emissions for the month shall be calculated as follows and then converted to tons:
 - (i) For the 80 MMBtu/hr natural gas-fired custom made heat medium heater using the manufacturer-supplied VOC emission factor of 0.019 lb/mmscf, an hourly fuel consumption rate of 88.667 mmscf/hr (based on conservative fuel heat content of 900 Btu/scf), and the operating hours for the calendar month.
 - (ii) For the 100 MMscfd custom made amine plant acid gas vent using the hours the amine plant operated for the month, and the appropriate manufacturer-specified VOC emission factor in lb/hr from Table 2 below, based on the results of the most recent CO₂ content laboratory analysis and the concurrently-measured throughput of the acid gas entering the amine plant contactor at the Simpson Treating Plant. If the results of the most recent laboratory analysis and measured throughput do not fall within the scenarios below, the Permittee shall use 0.7 lb/hr or obtain new emission factors from the manufacturer and use those factors as appropriate:

Table 2 – Emissions from Amine Plant CO₂ Vent Stack¹

CO ₂ %	6% Summer ²	6% Winter ²	6.5% Summer ²	6.5% Winter ²	8% Summer ²	8% Winter ²
Gas through Contactor	100 MMscf/d	100 MMscf/d	88.8 MMscf/d	88.8 MMscf/d	79.2 MMscf/d	79.2 MMscf/d
Total VOC (lb/hr)	0.62	0.69	0.58	0.65	0.59	0.66

¹ Source: Red Cedar's December 20, 2011 Synthetic Minor NSR Permit Application. Emission factors, reported in tpy, are based on CO₂ content laboratory analysis of the acid gas entering the amine plant contactor and have been converted to lb/hr.

² Summer vs. winter distinction based on ambient temperatures of 90° F and 10° F, respectively. Similar to natural gas dehydration units, the amine process is more efficient in colder weather, so more gas can be processed in the winter.

- (iii) For the two (2) 70 MMscfd TEG dehydration systems, adding the following, calculated as described below:
 - (A) The VOC emissions for each of the two (2) 1.2 MMBtu/hr natural gas-fired TEG reboilers, using: the VOC emission factor of 5.5 lb/MMscf found in AP-42 Fifth Edition, Volume I, Chapter 1: Stationary External Combustion Sources, Section 1.4: Natural Gas Combustion, Table 1.4-2; the hourly fuel consumption rate of 1.667 mmscf/hr (based on conservative fuel heat content of 900 Btu/scf); and the operating hours for the calendar month; and
 - (B) The VOC emissions from each of the TEG dehydration system regenerator still vents and flash tanks, using GRIGlyCalc Version 4.0 or higher.
- (iv) If data on operating hours is not available for a particular unit for that month, full-time operation (24 hours per day) for the month shall be assumed.
- (c) Total VOC emissions for each of the liquid storage tank IEUs at the Simpson Treating Plant specified in Table 1 of this permit, for each month, shall be 1/12 of the annual emissions estimated in tons using EPA Tanks Version 4.0 or higher.
- (d) Subsequent to the initial calculation, emissions of VOC for the Simpson Treating Plant shall be calculated each month, as specified above, except that for calculating VOC and CH₂O emissions from each 1,622 hp 4SLB natural gas-fired engine, results from the most recent performance tests shall be used in the calculation.

J. Recordkeeping Requirements

The Permittee shall keep the following records:

1. The total monthly and 12-month consecutive VOC emissions for the Simpson Treating Plant and all information used to calculate the values;
2. The total monthly and 12-month consecutive VOC and CH₂O emissions for each 1,622 hp 4SLB natural gas-fired engine and all information used to calculate the values;
3. Manufacturer specifications, maintenance requirements, and all documentation pertaining to the development of VOC emission factors for the 100 MMscfd custom-made amine plant.

4. Manufacturer and/or equivalent Permittee or vendor specifications and maintenance requirements for each engine, catalytic control system, temperature-sensing device, and pressure-measuring device;
5. All calibration and maintenance conducted for each engine, catalytic control system, temperature-sensing device, and pressure-measuring device;
6. All temperature measurements on each engine required by this permit, as well as a description of any corrective actions taken pursuant to this permit;
7. All pressure drop measurements on each engine required by this permit, as well as a description of any corrective actions taken pursuant to this permit;
8. Records sufficient to demonstrate, pursuant to this permit, that the fuel for the engines is pipeline-quality natural gas in all respects, with the exception of the CO₂ concentration in the natural gas;
9. The results of all required testing and monitoring in this permit. The records shall include the following:
 - (a) The date, place, and time of sampling or measurements;
 - (b) The date(s) analyses were performed;
 - (c) The company or entity that performed the analyses;
 - (d) The analytical techniques or methods used;
 - (e) The results of such analyses or measurements; and
 - (f) The operating conditions as existing at the time of sampling or measurement;
10. All catalyst replacements, engine rebuilds, and engine replacements;
11. Each rebuilt or replaced engine break-in period, pursuant to the requirements of this permit, where an existing engine that has been rebuilt or replaced resumes operation without the catalyst control system, for a period not to exceed 200 operating hours; and
12. Each time any engine is shut down due to a deviation at the inlet temperature to the catalyst bed or pressure drop across the catalyst bed. The Permittee shall include in the record the cause of the problem, the corrective action taken, and the timeframe for bringing the temperature at the inlet to the catalyst bed or the pressure drop across the catalyst bed back into the range of compliance.

K. Records Retention

1. The Permittee shall retain all records required by this permit for a period of at least 5 years from the date the record was created.

2. Records shall be kept at the facility or the location that has day-to-day operational control over the facility.

L. Reporting Requirements

1. Annual Emission Reports

- (a) The Permittee shall submit a written annual report of the actual annual emissions from all emission units at the Simpson Treating Plant, including emissions from startups, shutdowns, and malfunctions, each year no later than April 1st. The annual report shall cover the period for the previous calendar year. All reports shall be certified to truth and accuracy by the person primarily responsible for Clean Air Act compliance for the Permittee.
- (b) The report shall include VOC, CH₂O, and CO emissions.
- (c) The report shall be submitted to:

U.S. Environmental Protection Agency, Region 8
Office of Partnerships and Regulatory Assistance
Tribal Air Permitting Program, 8P-AR
1595 Wynkoop Street
Denver, Colorado 80202

The report may be submitted via electronic mail to r8AirPermitting@epa.gov.

2. Any documents required to be submitted under this permit, with the exception of the Annual Emission Reports, shall be submitted to:

U.S. Environmental Protection Agency, Region 8
Office of Enforcement, Compliance & Environmental Justice
Air Toxics and Technical Enforcement Program, 8ENF-AT
1595 Wynkoop Street
Denver, Colorado 80202

Documents may be submitted electronically to r8AirReportEnforcement@epa.gov.

3. The Permittee shall promptly submit to the EPA a written report of any deviations of permit requirements, a description of the probable cause of such deviations, and any corrective actions or preventative measures taken. A “prompt” deviation report is one that is post marked or submitted via electronic mail to r8AirReportEnforcement@epa.gov as follows:
 - (a) Within 30 days from the discovery of any deviation of the emission limits or operational limits that is left un-corrected for more than 5 days after discovering the deviation; and
 - (b) By April 1st for the discovery of a deviation of recordkeeping or other permit conditions during the preceding calendar year that do not affect the Permittee’s ability to meet the emission limits.

4. The Permittee shall submit a written report for any required performance test to the EPA Regional Office within 60 days after completing the tests.
5. The Permittee shall submit any record or report required by this permit upon EPA request.

II. General Provisions

A. Conditional Approval

Pursuant to the authority of 40 CFR 49.151, the EPA hereby conditionally grants this permit to construct. This authorization is expressly conditioned as follows:

1. *Document Retention and Availability:* This permit and any required attachments shall be retained and made available for inspection upon request at the location set forth herein.
2. *Permit Application:* The Permittee shall abide by all representations, statements of intent and agreements contained in the application submitted by the Permittee. The EPA shall be notified 10 days in advance of any significant deviation from this permit application as well as any plans, specifications or supporting data furnished.
3. *Permit Deviations:* The issuance of this permit may be suspended or revoked if the EPA determines that a significant deviation from the permit application, specifications, and supporting data furnished has been or is to be made. If the proposed source is constructed, operated, or modified not in accordance with the terms of this permit, the Permittee will be subject to appropriate enforcement action.
4. *Compliance with Permit:* The Permittee shall comply with all conditions of this permit, including emission limitations that apply to the affected emissions units at the permitted facility/source. Noncompliance with any permit term or condition is a violation of this permit and may constitute a violation of the Clean Air Act and is grounds for enforcement action and for a permit termination or revocation.
5. *Fugitive Emissions:* The Permittee shall take all reasonable precautions to prevent and/or minimize fugitive emissions during the construction period.
6. *National Ambient Air Quality Standard and PSD Increment:* The permitted source shall not cause or contribute to a National Ambient Air Quality Standard violation or a PSD increment violation.
7. *Compliance with Federal and Tribal Rules, Regulations, and Orders:* Issuance of this permit does not relieve the Permittee of the responsibility to comply fully with all other applicable federal and tribal rules, regulations, and orders now or hereafter in effect.
8. *Enforcement:* It is not a defense, for the Permittee, in an enforcement action, to claim that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
9. *Modifications to Existing Permitted Emission Units/Limits:* For proposed modifications, as defined at §49.152(d), that would increase an emissions unit allowable emissions of pollutants above its existing permitted annual allowable emissions limit, the Permittee shall first obtain a

permit modification pursuant to the MNSR regulations approving the increase. For a proposed modification that is not otherwise subject to review under the PSD or MNSR regulations, such proposed increase in the annual allowable emissions limit shall be approved through an administrative permit revision as provided at §49.159(f).

10. *Relaxation of Legally and Practically Enforceable Limits:* At such time that a new or modified source within this permitted facility/source or modification of this permitted facility/source becomes a major stationary source or major modification solely by virtue of a relaxation in any legally and practically enforceable limitation which was established after August 7, 1980, on the capacity of the permitted facility/source to otherwise emit a pollutant, such as a restriction on hours of operation, then the requirements of the PSD regulations shall apply to the source or modification as though construction had not yet commenced on the source or modification.
11. *Revise, Reopen, Revoke and Reissue, or Terminate for Cause:* This permit may be revised, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee, for a permit revision, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition. The EPA may reopen this permit for a cause on its own initiative, e.g., if this permit contains a material mistake or the Permittee fails to assure compliance with the applicable requirements.
12. *Severability Clause:* The provisions of this permit are severable, and in the event of any challenge to any portion of this permit, or if any portion is held invalid, the remaining permit conditions shall remain valid and in force.
13. *Property Rights:* This permit does not convey any property rights of any sort or any exclusive privilege.
14. *Information Requests:* The Permittee shall furnish to the EPA, within a reasonable time, any information that the EPA may request in writing to determine whether cause exists for revising, revoking and reissuing, or terminating this permit or to determine compliance with this permit. For any such information claimed to be confidential, you shall also submit a claim of confidentiality in accordance with 40 CFR Part 2, Subpart B.
15. *Inspection and Entry:* The EPA or its authorized representatives may inspect this permitted facility/source during normal business hours for the purpose of ascertaining compliance with all conditions of this permit. Upon presentation of proper credentials, the Permittee shall allow the EPA or its authorized representative to:
 - (a) Enter upon the premises where this permitted facility/source is located or emissions-related activity is conducted, or where records are required to be kept under the conditions of this permit;
 - (b) Have access to and copy, at reasonable times, any records that are required to be kept under the conditions of this permit;
 - (c) Inspect, during normal business hours or while this permitted facility/source is in operation, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;

- (d) Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this permit or other applicable requirements; and
 - (e) Record any inspection by use of written, electronic, magnetic and photographic media.
16. *Permit Effective Date:* This permit is effective immediately upon issuance unless comments resulted in a change in the proposed permit, in which case the permit is effective 30 days after issuance. The Permittee may notify the EPA, in writing, that this permit or a term or condition of it is rejected. Such notice should be made within 30 days of receipt of this permit and should include the reason or reasons for rejection.
17. *Permit Transfers:* Permit transfers shall be made in accordance with 40 CFR 49.159(f). The Air Program Director shall be notified in writing at the address shown below if the company is sold or changes its name.

U.S. Environmental Protection Agency, Region 8
Office of Partnerships and Regulatory Assistance
Tribal Air Permitting Program, 8P-AR
1595 Wynkoop Street
Denver, Colorado 80202

18. *Invalidation of Permit:* This permit becomes invalid if construction is not commenced within 18 months after the effective date of this permit, construction is discontinued for 18 months or more, or construction is not completed within a reasonable time. The EPA may extend the 18-month period upon a satisfactory showing that an extension is justified. This provision does not apply to the time period between the construction of the approved phases of a phased construction project. The Permittee shall commence construction of each such phase within 18 months of the projected and approved commencement date.
19. *Notification of Start-Up:* The Permittee shall submit a notification of the anticipated date of initial start-up of this permitted source to the EPA within 60 days of such date, unless this permitted source is an existing source.

B. Authorization

Authorized by the United States Environmental Protection Agency, Region 8

6-5-14

Debra H. Thomas
Acting Assistant Regional Administrator
Office of Partnerships and Regulatory Assistance

Date