

Permit #: 28.0503-57-01C

Effective Date: December 9, 2013



**SOUTH DAKOTA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES
AIR QUALITY
CONSTRUCTION PERMIT**

The seal of the State of South Dakota is a large, circular emblem with a serrated outer edge. It features a central landscape scene with a river, mountains, and a sun. The words "STATE OF SOUTH DAKOTA" are written in an arc across the top, and "1889" is at the bottom. The motto "LIBERTY UNDER THE PEOPLE" is inscribed in a smaller arc within the seal.


Steven M Pirner, Secretary

Department of Environment and Natural Resources

**Under the South Dakota Air Pollution
Control Regulations**

Pursuant to Chapter 34A-1-21 of the South Dakota Codified Laws and the Air Pollution Control Regulations of the State of South Dakota and in reliance on statements made by the owner designated below, a permit to construct and operate is hereby issued by the Secretary of the Department of Environment and Natural Resources. This permit authorizes such owner to construct and operate the permitted unit(s) at the location designated below and under the listed conditions.

A. Owner

1. Company Name and Mailing Address

Redfield Energy, LLC
38650 171st Street
Redfield, South Dakota 57469

2. Actual Source Location if Different from Above

W ½ of SE ¼ of Section 16, T-117-N, R-64-W, Spink County
Redfield, South Dakota 57469

3. Permit Contact

Simon Appel
Director of Safety and Environmental Regulations
(605) 302-0090

4. Facility Contact

Gary Bentzin
Plant Manager
(605) 302-0090

5. Responsible Official

Gary Bentzin
Plant Manager
(605) 302-0090

B. Permit Revisions

Not applicable

C. Type of Operation

Ethanol production facility.

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1.0 Standard Conditions

1.1 Construction and operation of source

In accordance with Administrative Rules of South Dakota (ARSD) 74:36:20:15(9), the owner or operator shall construct and operate the units, controls, and processes as described in Table 1-1 in accordance with the statements, representations, and supporting data contained in the complete permit application received August 12, 2013, unless modified by the conditions of this permit. Except as otherwise provided herein, the control equipment in Table 1-1 shall be operated at all times in accordance with the manufacturer's specification and in a manner that achieves compliance with the conditions of this permit. The application consists of the application forms, supporting data, and supplementary correspondence. If the owner or operator becomes aware that it failed to submit any relevant facts in a permit application or submitted incorrect information in an application, such information shall be promptly submitted.

Table #1-1 – Description of Permitted Units, Operations, and Processes

Unit	Description	Maximum Operating Rate	Control Device
#1	Grain receiving, grain transfer, and storage bin loading. Trucks and railcars transport grain to the ethanol plant and dump grain into a receiving pits located in a partially enclosed building. Elevator legs transport the grain from the receiving pit to grain storage bins.	1,260 tons of grain per hour	Baghouse
	Elevator legs transport the grain to the hammer mills by a conveyor	80 tons of grain per hour	
#2	Grain milling. The grain is milled in one of three hammer mills.	37.6 tons of grain per hour (each hammer mill)	Baghouse
	An elevator leg transfer the flour to the fermentation process.	115 tons of grain per hour	
#3	Fermentation system. Ethanol is produced from the fermentation process. The fermentation process occurs in four fermenters and the liquid beer is stored in a beer well.	1,518,500 gallons of mash per hour	Wet scrubber.
#4	DDGS dryers. The distillers grain and solubles is dried in two dryers operated in series. Each dryer has a multi cyclone to collect product and is fired on natural	Each dryer has a heat input capacity of 40 million Btus per hour and processes 23.5 tons of	A thermal oxidizer heat recovery boiler system. The

Unit	Description	Maximum Operating Rate	Control Device
	gas or propane. The thin stillage and solids fractions of the wet distillers grain and solubles are separated by five centrifuges.	DDGS per hour.	thermal oxidizer has a maximum operating rate of 125 million Btus per hour heat input.
	Distillation process. The distillation process distills the liquid beer. The distillation process consists of the beer stripper, rectifier, side stripper, molecular sieve, and evaporators. Biomethanator. Methane produced by the biomethanator is either routed to Unit #7 or the DDGS dryers.	800 gallons of beer per minute.	
#5	Dried distillers grain silo	80 tons of dried distillers grain per hour	Baghouse
#6	Submerged truck loading rack	24,000 gallons of denatured ethanol per hour.	A flare. The flare has an operating rate of 3.2 million Btus per hour heat input
#7	Biomethanator Flare. Methane produced by the biomethanator is either routed to Unit #4 or the biomethanator flare.	3.2 million Btus per hour heat input	Not applicable
#8	Railcar loading rack	24,000 gallons of denatured ethanol per hour.	Not applicable
#9	Fire Pump. The fire pump is fired on distillate oil.	2.18 million Btus per hour heat input	Not applicable
#10	Industrial cooling tower with four cells	Not applicable	Not applicable
#11	Tank #1 – An above ground storage tank with an internal floating roof. The tank will store ethanol.	100,000 gallons	Not applicable
#12	Tank #2 – An above ground storage tank with an internal floating roof. The tank	100,000 gallons	Not applicable

Unit	Description	Maximum Operating Rate	Control Device
	will store ethanol.		
#13	Tank #3 – An above ground storage tank with an internal floating roof. The tank will store gasoline.	100,000 gallons	Not applicable
#14	Tank #4 – An above ground storage tank with an internal floating roof. The tank will store denatured ethanol.	750,000 gallons	Not applicable
#15	Tank #5 – An above ground storage tank with an internal floating roof. The tank will store denatured ethanol	750,000 gallons	Not applicable
#16	Cooling cyclone. The cooling cyclone cools the dried distillers grain.	23 tons of DDGS per hour.	Baghouse
#17	Grain receiving dump pit #2.	420 tons per hour	Not applicable

1.2 Duty to comply

In accordance with ARSD 74:36:20:15(12)(a) and (c), the owner or operator shall construct and operate in compliance with the conditions of this permit. An owner or operator who knowingly makes a false statement in any record or report or who falsifies, tampers with, or renders inaccurate, any monitoring device or method is in violation of this permit. A violation of any condition in this permit is grounds for enforcement, reopening this permit, permit termination, or denial of an application to operate. The owner or operator, in an enforcement action, cannot use the defense that it would have been necessary to cease or reduce the permitted activity to maintain compliance. The owner or operator shall provide any information requested by the Secretary to determine compliance or whether cause exists for reopening or terminating this permit.

1.3 Property rights or exclusive privileges

In accordance with ARSD 74:36:20:15(12)(b), the issuance of this permit, adoption of design criteria, and approval of plans and specifications does not convey any property rights of any sort, any exclusive privileges, any authorization to damage, injure or use any private property, any authority to invade personal rights, any authority to violate federal, state or local laws or regulations, or any taking, condemnation or use of eminent domain against any property owned by third parties. The State does not warrant the owner's or operator's compliance with this permit, design criteria, approved plans and specifications, and operation under this permit, will not cause damage, injury or use of private property, an invasion of personal rights, or violation of federal, state or local laws or regulations. The owner or operator is solely and severally liable for all damage, injury or use of private property, invasion of personal rights, infringement of federal,

state or local laws and regulations, or taking or condemnation of property owned by third parties, which may result from actions taken under the permit.

1.4 Penalty for violating a permit condition

In accordance with South Dakota Codified Laws (SDCL) 34A-1-39 and 34A-1-47, a violation of a permit condition may subject the owner or operator to civil or criminal prosecution, a state penalty of not more than \$10,000 per day per violation, injunctive action, administrative permit action, and other remedies as provided by law.

1.5 Inspection and entry

In accordance with SDCL 34A-1-41, the owner or operator shall allow the Secretary to:

1. Enter the premises where a regulated activity is located or where pertinent records are stored;
2. Have access to and copy any records that are required under this permit;
3. Inspect the construction and operations regulated under this permit; and/or
4. Sample or monitor any substances or parameters for the purpose of assuring compliance.

1.6 Severability

In accordance with ARSD 74:36:20:15(11), any portion of this permit that is void or challenged shall not affect the validity of the remaining permit requirements.

1.7 Credible evidence

In accordance with ARSD 74:36:13:07, credible evidence may be used for the purpose of establishing whether the owner or operator has violated or is on violation of this permit. Credible evidence is as follows:

1. Information from the use of the following methods is presumptively credible evidence of whether a violation has occurred at the source:
 - a. A monitoring method approved for the source pursuant to 40 CFR § 70.6(a)(3) and incorporated in this permit; or
 - b. Compliance methods specified in an applicable plan;
2. The following testing, monitoring, or information gathering methods are presumptively credible testing, monitoring, or information-gathering methods:
 - a. Any monitoring or testing methods approved in this permit, including those in 40 CFR Parts 51, 60, 61, and 75; or
 - b. Other testing, monitoring, or information-gathering methods that produce information comparable to that produced by any method in section (1) or (2)(a).

2.0 Construction and Operating Permit Deadlines

2.1 Commence construction

In accordance with ARSD 74:36:20:21, this permit becomes invalid if the owner or operator has not commenced construction within 18 months of the effective date of this permit; discontinued construction for a period of 18 months or more; or construction is not completed within 10 years of the effective date of this permit.

2.2 Submit operating permit application

In accordance with ARSD 74:36:20:20, the owner or operator shall submit a complete permit application for an operating permit pursuant to ARSD 74:36:05. A complete permit application for a Title V air quality operating permit shall be submitted within 12 months after issuance of this permit.

3.0 Permit Revisions

3.1 Administrative permit amendment

In accordance with ARSD 74:36:20:16 and 74:36:20:17, the Secretary shall determine whether an administrative permit amendment is applicable to a proposed revision within 15 days from receiving a request for a permit revision. The Secretary shall issue an administrative permit amendment without the procedural requirements applicable to obtaining this construction permit. As provided in ASRD 74:36:01:03, the Secretary considers a proposed revision an administrative permit amendment if the proposed revision accomplishes one of the following:

1. Corrects typographical errors;
2. Changes the name, address, or phone number of any person identified in this permit or provides a similar minor administrative change at the source;
3. Requires more frequent monitoring or reporting by the source;
4. The ownership or operational control of a source changes and the Secretary determines that no other change in this permit is necessary. However, the new owner must submit a certification of applicant form and a written statement specifying the date for transfer of operating permit responsibility, coverage, and liability; or
5. Any other change that the Secretary determines to be similar to those requirements in this condition.

3.2 Reopening permit

In accordance with ARSD 74:36:20:18 and 74:36:20:19, the Secretary may reopen this permit for further review if the Secretary determines the permit contains a material mistake in establishing the emissions standard or limits or other requirements of the construction permit or the Secretary determines the construction permit must be revised to ensure compliance with the applicable requirements of ARSD 74:36 and the federal Clean Air Act. The Secretary shall notify the owner

or operator 30 days prior to reopening a construction permit or in a shorter time period in an emergency. The reopening of this construction permit shall follow the same procedural requirements to issue a construction permit and shall affect only those parts of the permit for which cause to reopen exist.

4.0 Recordkeeping and Reporting

4.1 Recordkeeping and reporting

In accordance with ARSD 74:36:20:15(10), the owner or operator shall maintain all monitoring data, records, reports, and pertinent information specified by this permit for five years from the date of sample, measurement, report, or application. The records shall be maintained on site for the first two years and may be maintained off site for the last three years. All records must be made available to the Secretary for inspection. All notifications and reports shall be submitted to the following address:

South Dakota Department of Environment and Natural Resources
PMB 2020, Air Quality Program
523 E. Capitol, Joe Foss Building
Pierre, SD 57501-3181

4.2 Certification statement

In accordance with ARSD 74:36:20:15(10), all documents required by this permit, including application forms, reports, and compliance certification, must be certified by a responsible official or a duly authorized representative. The certification shall include the following statement:

“I certify that, based on information and belief formed after reasonable inquiry, the statements and information in this document and all attachments are true, accurate, and complete.”

A responsible official for a corporation is a responsible corporate officer and for a partnership or sole proprietorship is a general partner or the proprietor, respectively. A person is a duly authorized representative only if:

1. The authorization is made in writing by a person described above and submitted to the Secretary; and
2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters.

The duly authorized representative must be designated prior to or together with any reports or information to be signed by a duly authorized representative. The responsible official shall notify the Secretary if an authorization is no longer accurate.

4.3 Reporting permit violations

In accordance with ARSD 74:36:20:15(10), the owner or operator shall report all permit violations. A permit violation should be reported as soon as possible, but no later than the first business day following the day the violation was discovered. The permit violation may be reported by telephone to the South Dakota Department of Environment and Natural Resources at (605) 773-3151 or by FAX at (605) 773-5286.

A written report shall be submitted within five days of discovering the permit violation. Upon prior approval from the Secretary, the submittal deadline for the written report may be extended up to 30 days. The written report shall contain:

1. A description of the permit violation and its cause(s);
2. The duration of the permit violation, including exact dates and times; and
3. The steps taken or planned to reduce, eliminate, and prevent reoccurrence of the permit violation.

4.4 Monthly records

In accordance with ARSD 74:36:20:15(10), the owner or operator shall calculate and record the following amounts each month:

1. The number of gallons of undenatured ethanol produced through Unit #5 during the month and during the 12-month rolling period for that month;

The 12-month rolling total shall be calculated every month using that month's value and the previous 11 months' values.

4.5 Quarterly reporting

In accordance with ARSD 74:36:20:15(10), the owner or operator shall submit a quarterly report to the Secretary by the end of each calendar quarter. The quarterly report shall contain the following information:

1. Name of facility, permit number, reference to this permit condition, identifying the submittal as a quarterly report, and calendar dates covered in the reporting period; and
2. The number of gallons of undenatured ethanol produced, in gallons, in each month and the 12-month rolling total for each month in the reporting period and supporting documentation.

The first quarterly report must be postmarked no later than 30 days after the end of the calendar quarter in which this permit is issued. The remaining reports must be postmarked no later than

30 days after the end of the reporting period (i.e., April 30th, July 30th, October 30th, and January 30th).

5.0 Control of Regulated Air Pollutants

5.1 Ethanol production limit

In accordance with ARSD 74:36:20:15(9), the owner or operator shall not produce more than 63 million gallons of undenatured ethanol during any 12-month rolling period. Once this permit is issued, the limit of 60 million gallons of undenatured ethanol during any 12-month rolling period identified in permit condition 7.14 of the owners' or operators' Title V air quality operating permit #28.0503-57 is not applicable.

5.2 Circumvention not allowed

In accordance with ARSD 74:36:20:24, the owner or operator may not install, use a device, or use a means that conceals or dilutes an air emission that would otherwise violate this permit. This includes operating a unit or control device that emits air pollutants from an opening other than the designed stack, vent, or equivalent opening.

5.3 Minimizing emissions

In accordance with ARSD 74:36:20:15(9), the owner or operator shall at all time, when practicable, maintain and operate all permitted units in a manner that minimizes air pollution emissions.

6.0 Performance Tests

6.1 Performance test may be required

In accordance with ARSD 74:36:11:02, the Secretary may request a performance test. A performance test shall be conducted while operating the unit at or greater than 90 percent of its maximum design capacity, unless otherwise specified by the Secretary. A performance test that is conducted while operating at less than 90 percent of its maximum design capacity will result in the operation being limited to the percent achieved during the performance test. The Secretary has the discretion to extend the deadline for completion of the performance test required by the Secretary if circumstances reasonably warrant but will not extend the deadline past a federally required performance test deadline.

6.2 Test methods and procedures

In accordance with ARSD 74:36:11:01, the owner or operator shall conduct the performance test in accordance with 40 CFR Part 60, Appendix A, 40 CFR Part 63, Appendix A, and 40 CFR Part 51, Appendix M. The Secretary may approve an alternative method if a performance test

specified in 40 CFR Part 60, Appendix A, 40 CFR Part 63, Appendix A, and 40 CFR Part 51, Appendix M is not applicable or required.

6.3 Representative performance test

In accordance with ARSD 74:36:07:01, as referenced to 40 CFR § 60.8(c), performance tests shall be conducted under such conditions as the Secretary shall specify to the owner or operator based on the representative performance of the unit being tested. The owner or operator shall make available to the Secretary such records as may be necessary to determine the conditions of the performance tests. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a performance test nor shall emissions in excess of the level of the applicable emission limit during periods of startup, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in this permit.

6.4 Submittal of test plan

In accordance with ARSD 74:36:11:01, the owner or operator shall submit the proposed testing procedures to the Secretary at least 30 days prior to any performance test. The Secretary will notify the owner or operator if the proposed test procedures are approved or denied. If the proposed test procedures are denied, the Secretary will provide written notification that outlines what needs to be completed for approval.

6.5 Notification of test

In accordance with ARSD 74:36:11:03, the owner or operator shall notify the Secretary at least 10 days prior to the start of a performance test to arrange for an agreeable test date when the Secretary may observe the test. The Secretary may extend the deadline for the performance test in order to accommodate schedules in arranging an agreeable test date.

6.6 Performance test report

In accordance with ARSD 74:36:20:15(10), the owner or operator shall submit a performance test report to the Secretary within 60 days after completing the performance test or by a date designated by the Secretary. The performance test report shall contain the following information:

1. Description of the process and the air pollution control system being tested;
2. Sampling location description(s);
3. A description of sampling and analytical procedures and any modifications to standard procedures;
4. Test results expressed in units consistent with the applicable emission limit;
5. Quality assurance procedures and results;
6. Records of unit's operating conditions during the test (e.g., operating rate, fuel type);
7. Raw data sheets for field sampling and field and laboratory analyses;
8. Documentation of calculations;
9. All data recorded and used to establish parameters for compliance monitoring; and

10. Any other information required by the test method.

6.7 Specific performance test methods for volatile organic compounds

In accordance with ARSD 74:36:07:01, the owner or operator shall conduct any performance tests required to determine volatile organic compound emission rates in accordance with 40 C.F.R. Part 51, Appendix M; Method 207 and 40 C.F.R. Part 60, Appendix A; Method 18. 2,3-butanediol will be sampled through the chromatography column approximately 2.5 times faster than the maximum allowable sampling rate for the other VOCs in the sampling program (e.g. acetaldehyde, acrolein, and ethyl acetate). This requirement applies only if the Method 207 results indicate that 2,3-butanediol should be sampled as part of the Method 18 testing. When summing analytes per Method 18, non-detect data will be included in the total VOC mass as one half of the compound method detection limit; except that, if all three performance test runs result in a non-detect measurement and the method detection limit is less than or equal to 1.0 part per million by volume on a dry basis, then all such non-detect data will be treated as zero mass.